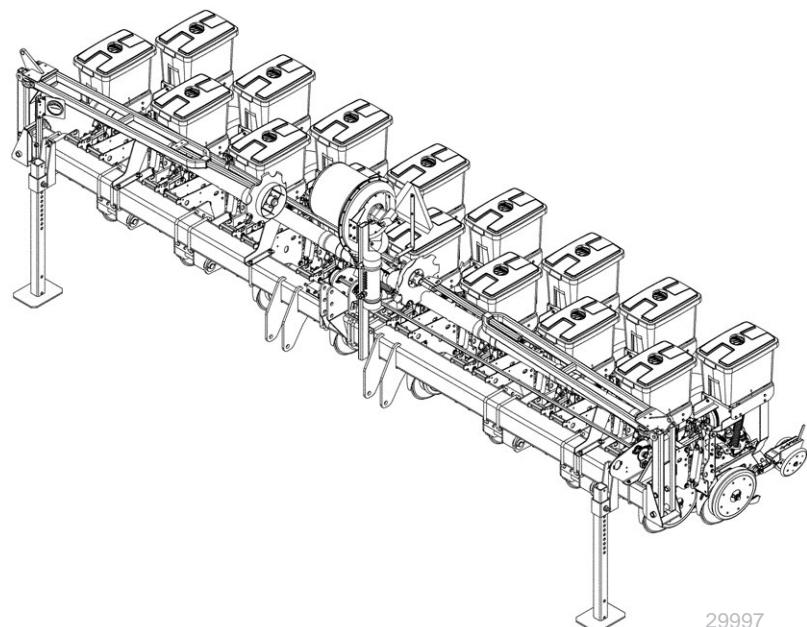

Operator Manual

YP425A3P, YP625A3P & YP825A3P
4-, 6- and 8-Row Yield-Pro® Air Planters
with Air-Pro® Seed Meters



Read the operator manual entirely. When you see this symbol, the subsequent instructions and warnings are serious - follow without exception. Your life and the lives of others depend on it!



*Illustrations may show optional equipment not supplied with standard unit,
or may show similar pull-type models and their options.*

ORIGINAL INSTRUCTIONS



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Important Safety Information

Look for Safety Symbol

The SAFETY ALERT SYMBOL indicates there is a potential hazard to personal safety involved and extra safety precaution must be taken. When you see this symbol, be alert and carefully read the message that follows it. In addition to design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.



Be Aware of Signal Words

Signal words designate a degree or level of hazard seriousness.

DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme situations, typically for machine components that, for functional purposes, cannot be guarded.



WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.



CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.



Prepare for Emergencies

- ▲ Be prepared if a fire starts.
- ▲ Keep a first aid kit and fire extinguisher handy.
- ▲ Keep emergency numbers for doctor, ambulance, hospital and fire department near phone.



Be Familiar with Safety Decals

- ▲ Read and understand "Safety Decals" on page 6, thoroughly.
- ▲ Read all instructions noted on the decals.
- ▲ Keep decals clean. Replace damaged, faded and illegible decals.



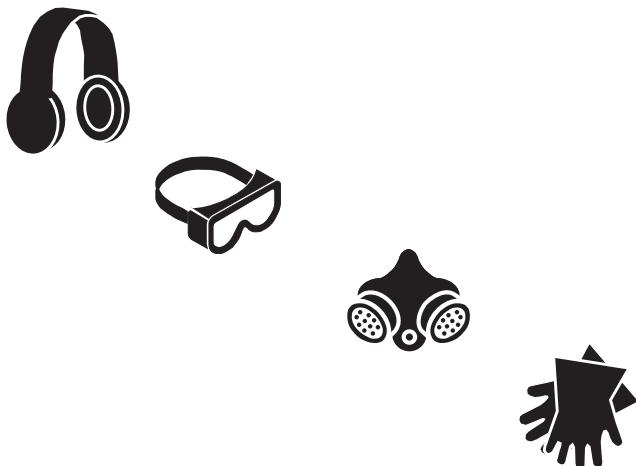
Wear Protective Equipment

Great Plains advises use of the following personal safety equipment.

- ▲ Hearing protection, such as earmuffs or earplugs, for making planter adjustments with the hydraulic fan running. Prolonged exposure to loud noise can cause hearing impairment or loss.

Avoid wearing entertainment headphones while operating machinery. Operating equipment safely requires the full attention of the operator.

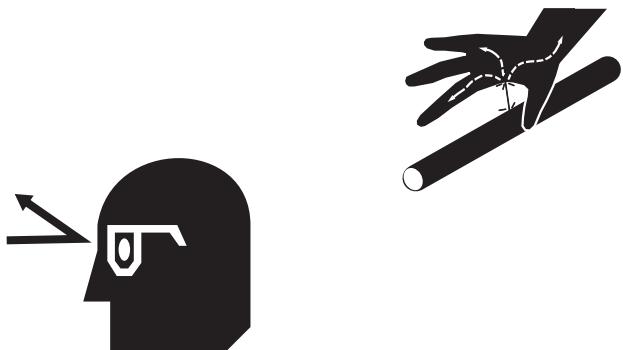
- ▲ Face shield, goggles or full face respirator when handling treated seed, seed lubricants or seed treatment.
- ▲ Gloves for working near sharp objects, and for handling lubricants or treatments.



Avoid High Pressure Fluids

Escaping fluid under pressure can penetrate the skin, causing serious injury. This planter requires a Power-Beyond port, which is always under pressure when the tractor is running.

- ▲ Avoid the hazard by relieving pressure at other remotes, and shutting down tractor before connecting, disconnecting or inspecting hydraulic lines.
- ▲ Use a piece of paper or cardboard, NOT BODY PARTS, to check for suspected leaks.
- ▲ Wear protective gloves and safety glasses or goggles when working with hydraulic systems.
- ▲ If an accident occurs, seek immediate medical assistance from a physician familiar with this type of injury.



Keep Riders Off Machinery

Riders obstruct the operator's view. Riders could be struck by foreign objects or thrown from the machine.

- ▲ Never allow children to operate equipment.
- ▲ Keep all bystanders away from machine during operation.



Use Safety Lights and Devices

Slow-moving tractors and towed implements can create a hazard when driven on public roads. They are difficult to see, especially at night.

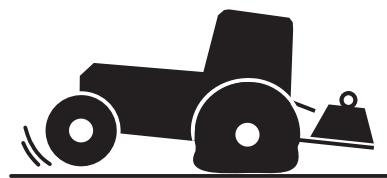
- ▲ Use flashing warning lights and turn signals whenever driving on public roads.
- ▲ Use lights and devices provided with implement.



Transport Machinery Safely

Maximum transport speed for implement is 20 mph (32 kph), 13 mph (22 kph) in turns. Some rough terrains require a slower speed. Sudden braking can cause a towed load to swerve and upset.

- ▲ *Do not exceed 20 mph. Never travel at a speed which does not allow adequate control of steering and stopping. Reduce speed if towed load is not equipped with brakes.*
- ▲ *Comply with state and local laws.*
- ▲ *Do not tow an implement using a tractor with insufficient ballast.*
- ▲ *Carry reflectors or flags to mark planter in case of breakdown on the road.*
- ▲ *Keep clear of overhead power lines and other obstructions when transporting. Refer to transport dimensions under "Specifications and Capacities" on page 97.*
- ▲ *Do not fold or unfold the planter while the tractor is moving.*



Handle Chemicals Properly

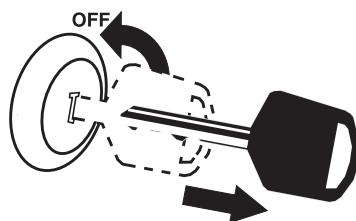
Agricultural chemicals can be dangerous. Improper use can seriously injure persons, animals, plants, soil and property.

- ▲ Read and follow chemical supplier instructions.
- ▲ Wear protective clothing.
- ▲ Handle all chemicals with care.
- ▲ Agricultural chemicals can be dangerous. Improper use can seriously injure persons, animals, plants, soil and property.
- ▲ Inhaling smoke from any type of chemical fire is a serious health hazard.
- ▲ Store or dispose of unused chemicals as specified by the chemical manufacturer.
- ▲ If chemical is swallowed, carefully follow the chemical manufacturer's recommendations and consult with a doctor.
- ▲ If persons are exposed to a chemical in a way that could affect their health, consult a doctor immediately with the chemical label or container in hand. Any delay could cause serious illness or death.
- ▲ Dispose of empty chemical containers properly. By law rinsing of the used chemical container must be repeated three times. Puncture the container to prevent future use. An alternative is to jet-rinse or pressure rinse the container.
- ▲ Wash hands and face before eating after working with chemicals. Shower as soon as application is completed for the day.
- ▲ Apply only with acceptable wind conditions. Wind speed must be below 5 mph. Make sure wind drift of chemicals will not affect any surrounding land, people or animals.
- ▲ Never wash out a hopper within 100 feet of any freshwater source or in a car wash.



Shutdown and Storage

- ▲ Lower planter, put tractor in park, turn off engine, and remove the key.
- ▲ Secure planter using blocks and supports provided.
- ▲ Detach and store planter in an area where children normally do not play.



Tire Safety

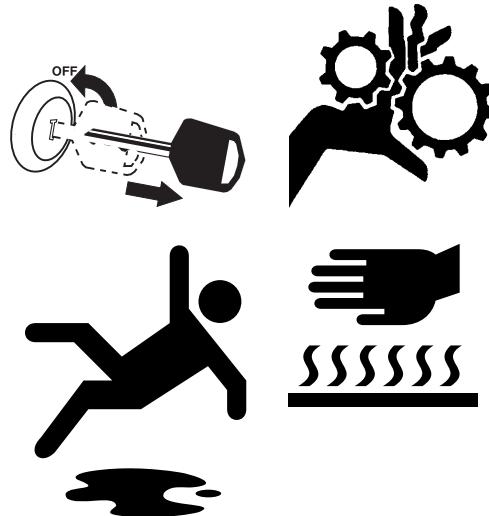
Tire changing can be dangerous. Employ trained personnel using correct tools and equipment.

- ▲ When inflating tires, use a clip-on chuck and extension hose long enough for you to stand to one side—not in front of or over tire assembly. Use a safety cage if available.
- ▲ When removing and installing wheels, use wheel-handling equipment adequate for weight involved.



Practice Safe Maintenance

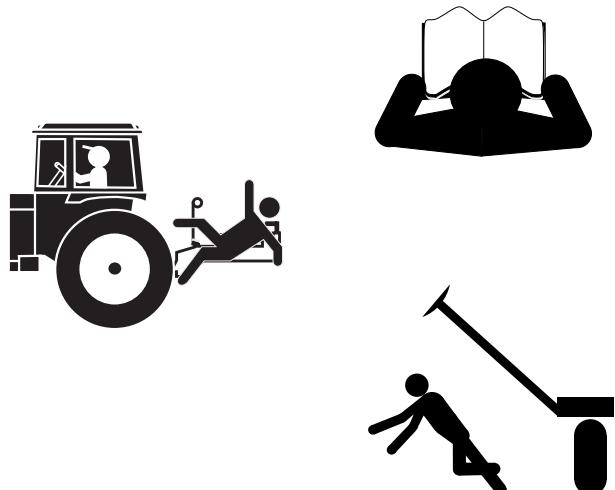
- ▲ Understand procedure before doing work. Use proper tools and equipment. Refer to this manual for additional information.
- ▲ Work in a clean, dry area.
- ▲ Lower the planter, put tractor in park, turn off engine, and remove key before performing maintenance.
- ▲ Make sure all moving parts have stopped and all system pressure is relieved.
- ▲ Allow planter to cool completely.
- ▲ Disconnect battery ground cable (-) before servicing or adjusting electrical systems or before welding on planter.
- ▲ Inspect all parts. Make sure parts are in good condition and installed properly.
- ▲ Remove buildup of grease, oil or debris.
- ▲ Remove all tools and unused parts from planter before operation.



Safety At All Times

Thoroughly read and understand the instructions in this manual before operation. Read all instructions noted on the safety decals.

- ▲ Be familiar with all planter functions.
- ▲ Operate machinery from the driver's seat only.
- ▲ Do not leave planter unattended with tractor engine running.
- ▲ Do not stand between the tractor and planter during hitching.
- ▲ Keep hands, feet and clothing away from power-driven parts.
- ▲ Wear snug-fitting clothing to avoid entanglement with moving parts.
- ▲ Watch out for wires, trees, etc., when folding and raising planter. Make sure all persons are clear of working area.

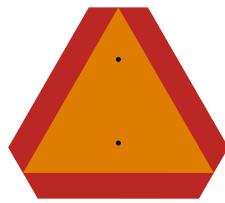


Safety Decals

Safety Reflectors and Decals

Your implement comes equipped with all lights, safety reflectors and decals in place. They were designed to help you safely operate your implement.

- ▲ *Read and follow decal directions.*
- ▲ *Keep lights in operating condition.*
- ▲ *Keep all safety decals clean and legible.*
- ▲ *Replace all damaged or missing decals. Order new decals from your Great Plains dealer. Refer to this section for proper decal placement.*
- ▲ *When ordering new parts or components, also request corresponding safety decals.*

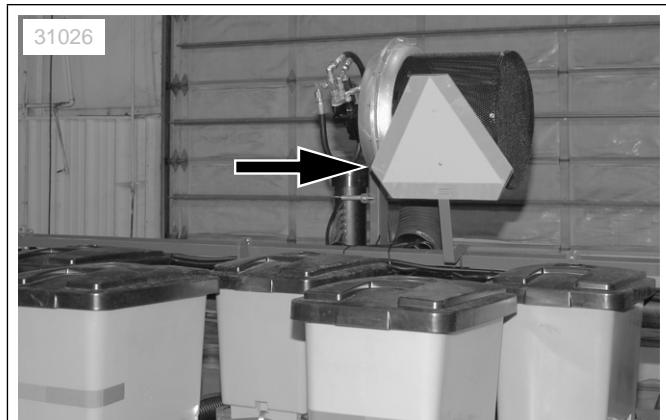


818-055C Slow Moving Vehicle Reflector

On the tube supporting meter pressurization manifold;
1 total

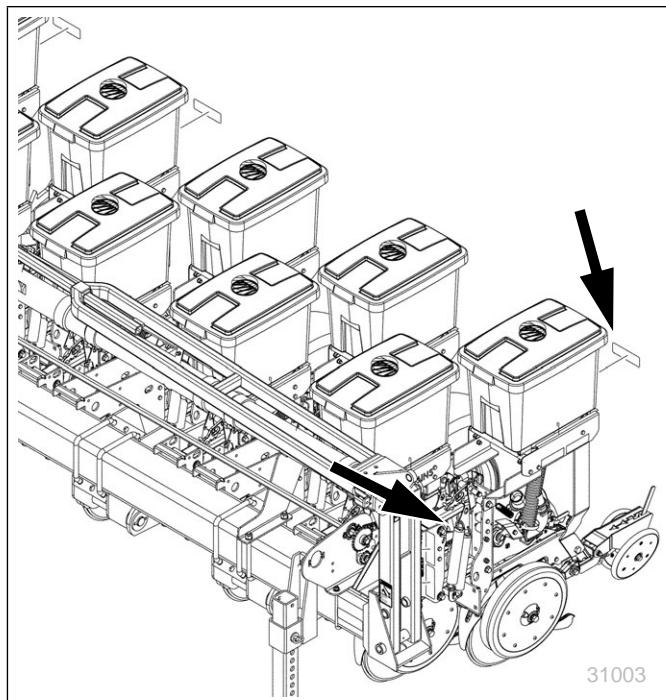
To install new decals:

1. Clean the area on which the decal is to be placed.
2. Peel backing from decal. Press firmly on surface, being careful not to cause air bubbles under decal.



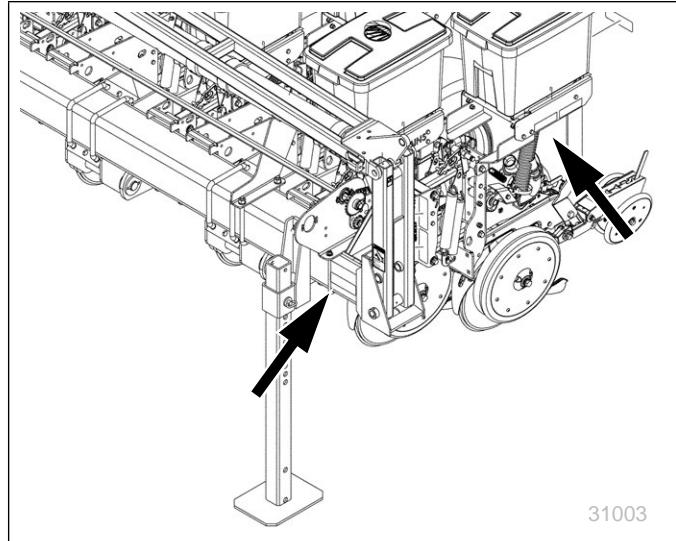
838-266C Red Reflectors

On the back of end seed hoppers
(rear seed hoppers on twin-row planters)
and on the back of the inner marker arm (option),
above daytime reflector:
2 or 4 total



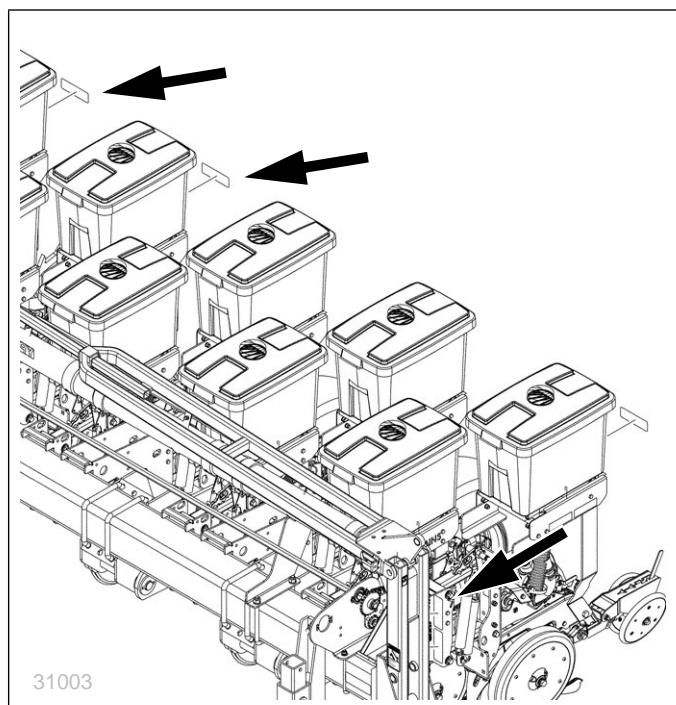
838-265C Amber Reflectors

On the front face of the front tool bar, each end,
on the outside of the end hopper supports
4 total



838-267C Daytime Reflectors

On the back of two center seed hoppers
(rear seed hoppers on twin-row planters) and
on the back of the inner marker arm (option),
below red reflector:
2 or 4 total





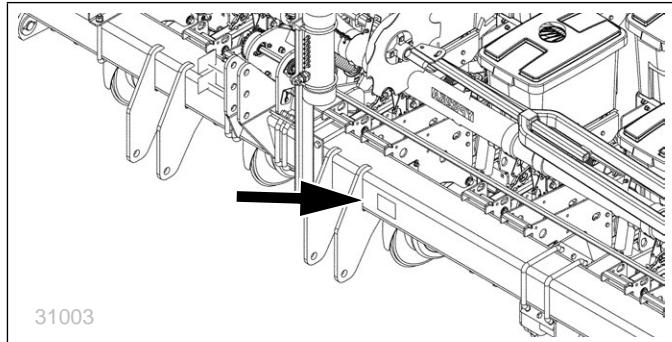
818-323C Danger: Possible Chemical Hazard

On the underside of each hopper lid;
4 to 16 total



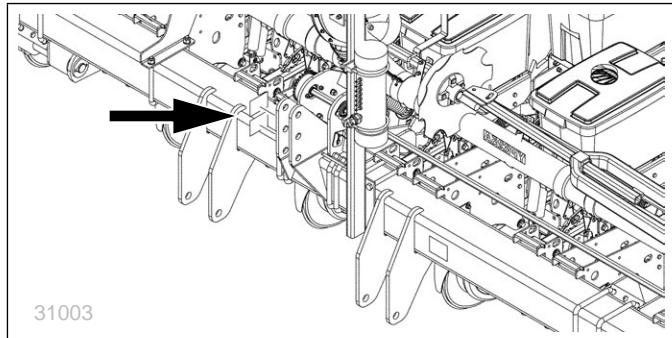
818-337C Warning: Speed

On front of main tool bar to left of hitch;
1 total



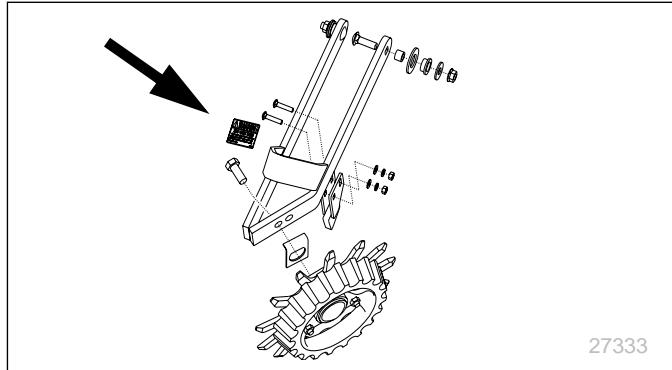
818-339C Warning: High Pressure Fluid Hazard

On right face of 3-point top hitch; 1 total



818-525C Warning: Sharp Object (Option)

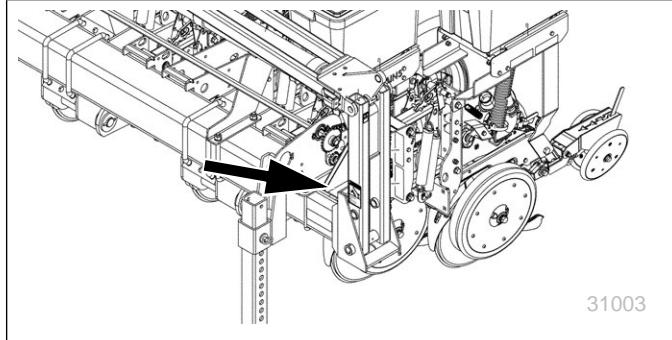
Front face of each row cleaner frame;
4 to 12 total





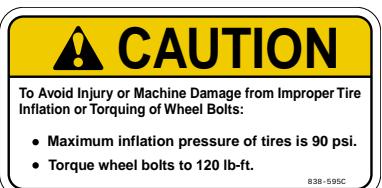
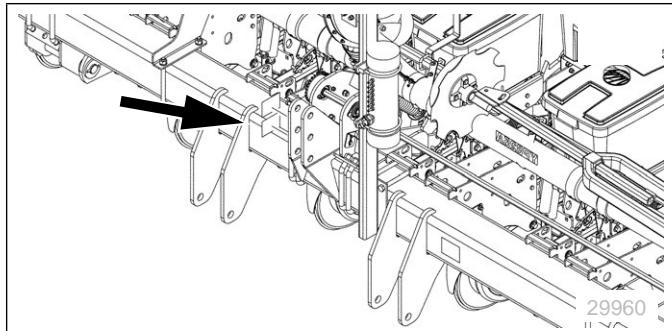
818-682C Warning: Markers (Option)

On front face of inner marker arm;
2 total



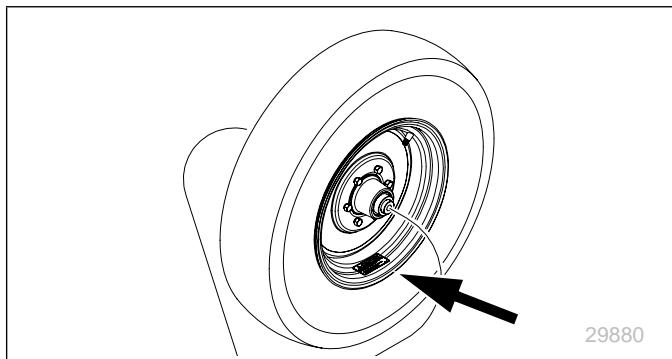
818-587C Caution: Read Operator's Manual

On right face of 3-point top hitch; 1 total



838-595C Caution: Tire Pressure and Bolt Torque

on valve stem side of each wheel;
2 or 4 total





Introduction

Great Plains welcomes you to its growing family of new product owners. The 4-, 6- and 8-Row Yield-Pro® Air Planter (YP425A3P, YP625A3P & YP825A3P) has been designed with care and built by skilled workers using quality materials. Proper setup, maintenance, and safe operating practices will help you get years of satisfactory use from the machine.

Models Covered

- YP425A3P-0430 4-Row, 30-inch
- YP425A3P-08TR 8-Row (4-Pair), 30-inch Twin-Row
- YP425A3P-0836 8-Row (4-Pair), 36-inch Twin-Row
- YP425A3P-0838 8-Row (4-Pair), 38-inch Twin-Row
- YP425A3P-0840 8-Row (4-Pair), 40-inch Twin-Row
- YP425A3P-0470 4-Row, 70 cm
- YP625A3P-0630 6-Row, 30-inch
- YP625A3P-12TR 12-Row (6-Pair), 30-inch Twin-Row
- YP625A3P-1236 12-Row (6-Pair), 36-inch Twin-Row
- YP625A3P-1238 12-Row (6-Pair), 38-inch Twin-Row
- YP625A3P-1240 12-Row (6-Pair), 40-inch Twin-Row
- YP625A3P-0670 6-Row, 70 cm
- YP825A3P-0830 8-Row, 30-inch
- YP825A3P-16TR 16-Row (8-Pair), 30-inch Twin-Row
- YP825A3P-1636 16-Row (8-Pair), 36-inch Twin-Row
- YP825A3P-1638 16-Row (8-Pair), 38-inch Twin-Row
- YP825A3P-1640 16-Row (8-Pair), 40-inch Twin-Row
- YP825A3P-0870 8-Row, 70 cm

Note: YP425A, YP625A and YP825A pull-type models have a separate Operator manual (401-651M).

Description of Unit

The YP4-6-825A3P Planter is a three-point precision planting implement for use in conventional till, minimum-till, or light no-till conditions. The YP4-6-825A3P accepts unit-mounted coulters and/or row cleaners. Coulters make it suitable for light to moderate no-till conditions only. The YP4-6-825A3P includes 25AP Series openers with Air-Pro® meters supporting a wide choice of seed disks.

Using This Manual

This manual will familiarize you with safety, assembly, operation, adjustments, troubleshooting, and maintenance. Read this manual and follow the recommendations to help ensure safe and efficient operation.

The information in this manual is current at printing. Some parts may change to assure top performance.

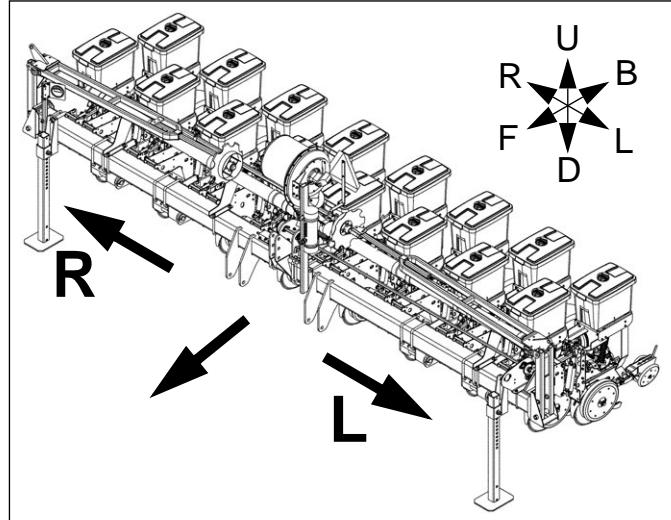


Figure 1
YP425A3P/625A3P/825A3P Planter

29997

Intended Usage

Use the YP4-6-825A3P Planter to seed production-agriculture crops only. Do not modify the planter for use with attachments other than Great Plains options and accessories specified for use with the YP4-6-825A3P.

Document Family

- 401-652M Owner's Manual (this document)
- 401-651B Seed and Fertilizer Rate manual
- 401-652P Parts manual
- 11001-1333 Dickey-john® PM300 manual

Definitions

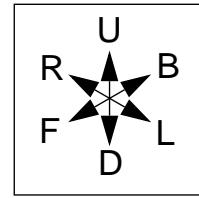
The following terms are used throughout this manual.

NOTICE

A crucial point of information related to the preceding topic. Read and follow the directions to remain safe, avoid serious damage to equipment and ensure desired field results.

Note: Useful information related to the preceding topic.

Right-hand and left-hand as used in this manual are determined by facing the direction the machine will travel while in use unless otherwise stated. An orientation rose in some line art illustrations shows the directions of: Up, Back, Left, Down, Front, Right.



Owner Assistance

If you need customer service or repair parts, contact a Great Plains dealer. They have trained personnel, repair parts and equipment specially designed for Great Plains products.

Refer to Figure 2

Your machine's parts were specially designed and should only be replaced with Great Plains parts. Always use the serial and model number when ordering parts from your Great Plains dealer. The serial-number plate is located on the right end of the rear face of the main tool bar.

Record your YP4-6-825A3P Planter model and serial number here for quick reference:

Model Number: _____

Serial Number: _____

Your Great Plains dealer wants you to be satisfied with your new machine. If you do not understand any part of this manual or are not satisfied with the service received, please take the following actions.

1. Discuss the matter with your dealership service manager. Make sure they are aware of any problems so they can assist you.
2. If you are still unsatisfied, seek out the owner or general manager of the dealership.

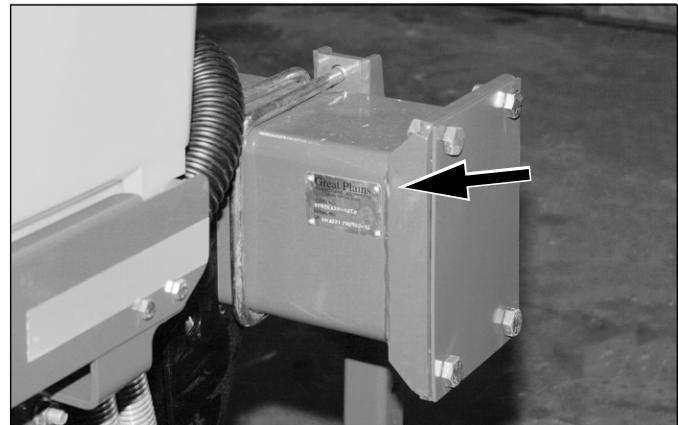
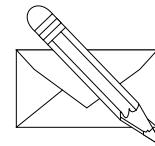


Figure 2
Serial Number Plate

31027

For further assistance write to:

Product Support
Great Plains Mfg. Inc., Service Department
PO Box 5060
Salina, KS 67402-5060



gp_web_cs@greatplainsmfg.com

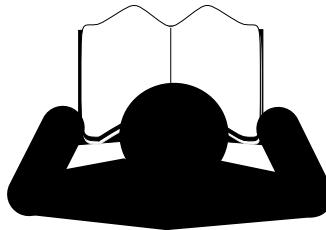
785-823-3276



Preparation and Setup

This section helps you prepare your tractor and YP425A3P, YP625A3P & YP825A3P Planter for use, and covers tasks that need to be done seasonally, or when the tractor/planter configuration changes.

Before using the planter in the field, you must hitch it to a suitable tractor, inspect systems and level the planter. Before using the planter for the first time, and periodically thereafter, certain adjustments and calibrations are required.



Initial Setup

See “**Appendix B - Pre-Delivery**” on page 111 for pre-delivery items (normally completed by dealer), and first-time/infrequent setup tasks, including:

- Install seed monitor console in tractor (page 113).
- Set marker extension (Option, page 115).
- Install any Options not factory- or dealer-installed.

Post-Delivery/Seasonal Setup

On initial delivery, use with a new tractor, and seasonally, check and as necessary, complete these items before continuing to the routine setup items:

- Bleed hydraulic system (page 81).

Pre-Planting Setup

Complete this checklist before routine setup:

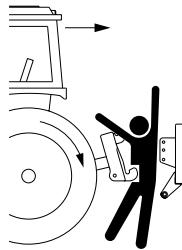
- Read and understand “**Important Safety Information**” on page 1.
- Check that all working parts are moving freely, bolts are tight, and cotter pins are spread.
- Check that all grease fittings are in place and lubricated. See “**Lubrication**” on page 86.
- Check that all safety decals and reflectors are correctly located and legible. Replace if damaged. See “**Safety Decals**” on page 6.
- Inflate tires to pressure recommended and tighten wheel bolts as specified. See “**Torque Values Chart**” on page 103.

Hitching Tractor to Planter

DANGER

Crushing Hazard:

Do not stand or place any body part between planter and moving tractor. You may be severely injured or killed by being crushed between the tractor and planter. Stop tractor engine and set parking brake before attaching cables and hoses.



1. To prevent soil compaction on rows, set tractor wheels at 60 inches center-to-center. For hillsides and steep slopes, set tractor wheels as wide as possible for maximum stability.
2. Adjust tractor lower links to maximize lifting height.
3. Set tractor sway blocks to minimize side sway. Set tractor hitch lift control to Float.
4. Back tractor up to planter. Align lower links with the lower hitch clevis on planter. Adjust hitch bushings ① and spacers ② supplied with planter according to the category of your tractor. Lock pins in place.
5. Attach tractor top link to upper hitch clevis on planter.
 - For Category II tractors, hitch tractor top link to lower hole pair ③ in planter clevis.
 - For Category II quick couplers and Category III tractors, hitch tractor top link to center hole pair in planter clevis.

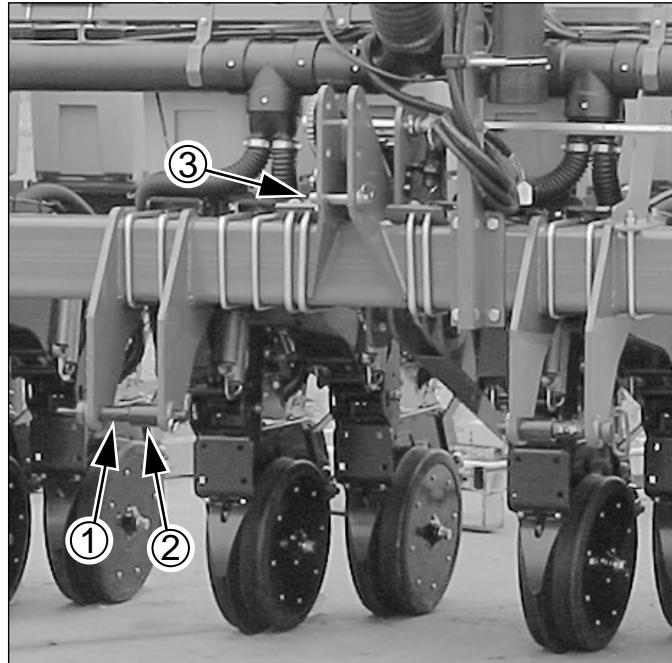


Figure 3
Three Point Hitch

31048

Electrical Hookup

Refer to Figure 4

Your planter is equipped with systems that require separate electrical connections. For future reference, note any optional connectors on this checklist.

- ① Lighting connector (standard)
- ② Monitor connector (standard)
- _____
- _____

Make sure tractor is shut down with accessory power off before making connections.

These connections may be made in any order. The key requirement is that all connections be made prior to planter movement.



Figure 4
Connector Identification

25236
31033

Hydraulic Hose Hookup



High Pressure Fluid Hazard:

*Shut down tractor before making hydraulic connections.
Only trained personnel should work with system hydraulics.*

Escaping fluid under pressure can have sufficient pressure to penetrate the skin causing serious injury. If an accident occurs, seek immediate medical assistance from a physician familiar with this type of injury.

Use paper or cardboard, NOT BODY PARTS, to check for leaks. Wear protective gloves and safety glasses or goggles when working with hydraulic systems.

Refer to Figure 5

Great Plains hydraulic hoses have color coded handle grips to help you hookup hoses to your tractor outlets. Hoses that go to the same remote valve are marked with the same color.

Current Style Color Coded Hose Handles

Color	Hydraulic Function
Green	Marker
Black	Fan

To distinguish hoses on the same hydraulic circuit, refer to the symbol molded into the handle grip. Hoses with an extended-cylinder symbol feed cylinder base ends.

Hoses with a retracted-cylinder symbol feeds cylinder rod ends.

For hydraulic fan and drive motors, connect the hose under the retracted cylinder symbol to the pressure side of the motor. Connect the hose under the extended cylinder symbol to the return side of the motor.

The fan motor further requires hookup of a third line, which returns hydraulic fluid from the fan motor case.

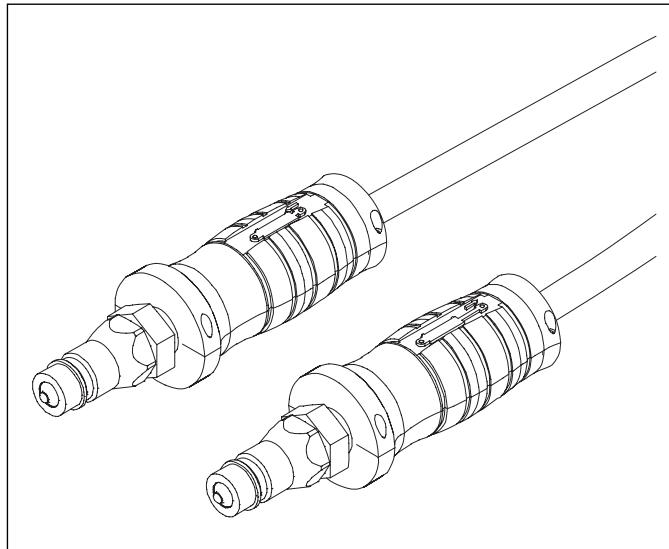
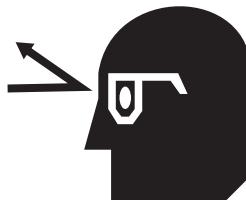


Figure 5
Color Coded Hose Handles

31733

Older Style Hoses with Color Ties

Refer to Figure 6 and Figure 7 on page 16

Hydraulic hoses are color coded to help you hookup hoses to your tractor outlets. Hoses that go to the same remote valve are marked with the same color tie.

Color	Hydraulic Function
Orange	Marker
White	Fan

To distinguish hoses on the same hydraulic circuit, refer to hose label.

- The fan motor case drain line is a separate hose with no label plate. This hose is always connected first and disconnected last.
- The hose under an extended-cylinder symbol feeds a cylinder base end or motor return line.
- The hose under a retracted-cylinder symbol feeds a cylinder rod end, or motor pressure line.

Secure hoses and cables so that they have sufficient slack for hitch movements, but cannot get caught between moving parts of planter. Failure to safely route and secure hoses and cables could result in damage requiring component repair/replacement, and lost field time.

Make connections in a specific order, described on the next page.

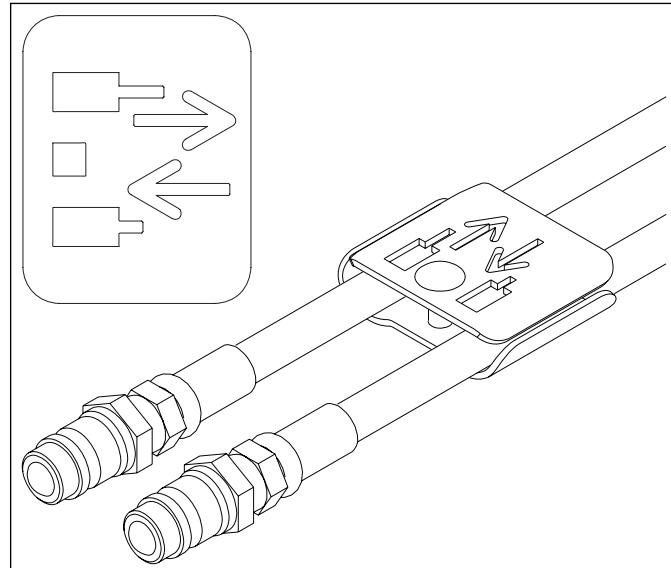


Figure 6
Older Style Hoses with Label

27270

NOTICE

Motor Seal Damage Risk:

Case Drain Hose must be attached first, prior to inlet and return hoses being connected.

Case Drain Hose must be detached last, to prevent damage to the fan motor.

NOTICE

Hydraulic Motor Performance Risk:

DO NOT hook case drain line to a “power-beyond port”.

Protect Motor Seals

Applies to planters with serial numbers:

(YP3P425A s/n B1004M-)

(YP3P625A s/n B1006P-) (YP3P825A s/n B1007R-)

1. Connect the fan case drain line ① first, before making any other connections. Connect this line to a low pressure drain port.

Note: Case drain hose has the smaller $\frac{1}{4}$ inch I.D. hose and small, flat-face, low-seep connector.

2. Connect the fan return ② line second.

Note: Fan pressure return hose has a large (1.06 inch/ 2.7 cm diameter) quick coupler.

3. Connect the fan motor pressure hose ③ third. If the tractor has a priority remote, use it for the fan connection.

4. Make marker (option) connections.

NOTICE

Machine Damage Risk:

DO NOT connect the fan case drain line to a power-beyond-port. Case Drain Hose must be attached first, prior to inlet and return hoses being connected. Case Drain Hose must be detached last, to prevent damage to the fan motor.

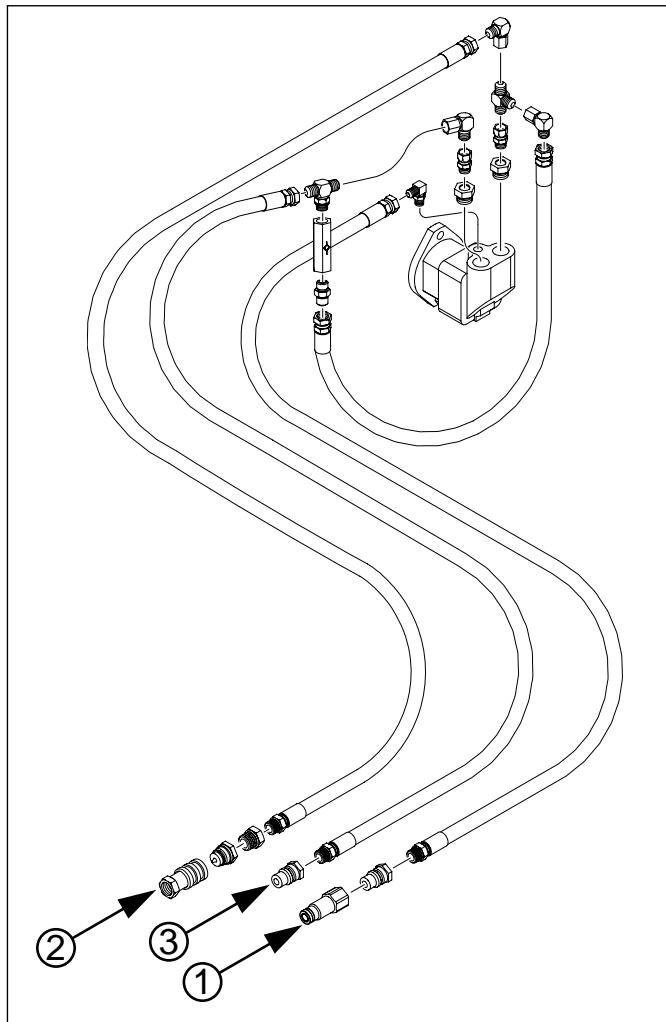


Figure 7
Fan Hoses (S/N-)

29781

Applies to planters with serial numbers:

(YP3P425A s/n B1005M+)

(YP3P625A s/n B1007P+) (YP3P825A s/n B1008R+)

For complete instructions see "Fan Circuit Operation (S/N+)" on page 30.

1. Connect the motor return line ③, to remote circuit return (Extend port) or to sump.
2. Connect the motor inlet line ④ to a tractor remote capable of 20 liters per minute. If a priority remote is available, use it for the fan.

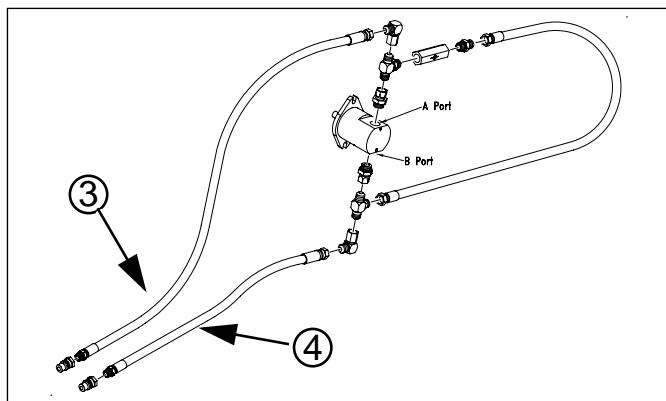


Figure 8
Fan Hoses (S/N+)

31886

Raise Parking Stands

Refer to Figure 3

3. Use tractor hitch circuit to raise planter slightly off parking stands.
4. Remove hairpin and cross-pin ①.
5. Slide stand tube up until lower storage hole ② aligns with bracket hole.
6. Insert cross-pin and secure with hairpin.
7. Repeat for other side of planter.

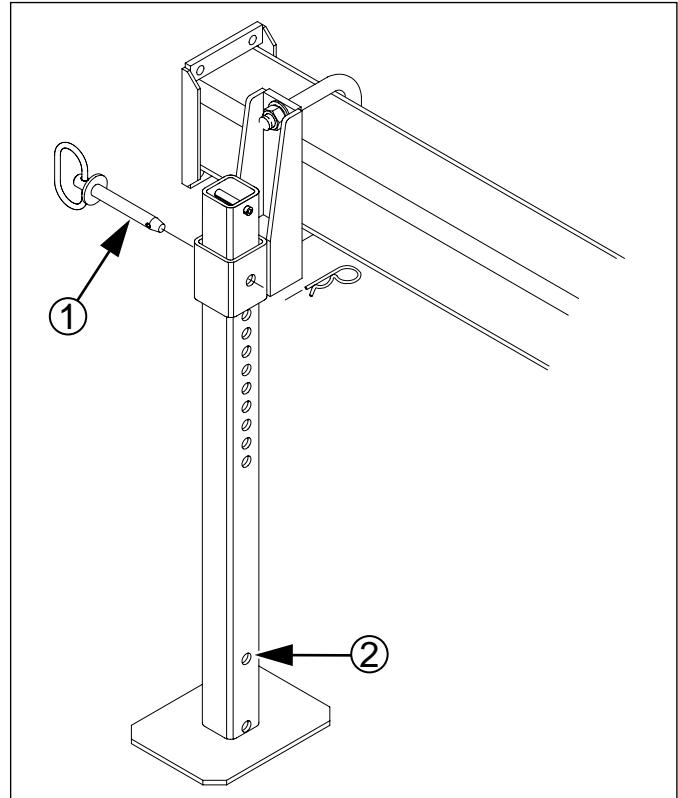


Figure 9
Parking Stand

31049

Leveling Planter

For row units to function correctly, planter must be:

- level from side to side,
- level from front to back, and;
- at correct tool bar height.

Perform this setup on level ground in representative field conditions.

Refer to Figure 10

1. Raise planter so that gauge wheels are just off ground.
2. At each gauge wheel, measure the pre-compressed, no-load length of the yoke spring ①.

All axles should be in the same (upper or lower) arm holes. All springs should have this same length. Note this length for step 9.

See page 45 for factory setting, and adjustments for local conditions.

3. Check tire pressures of gauge wheels. As necessary, inflate to specifications (page 103).

Refer to Figure 11

4. Measure height ② from bottom of main tool bar to ground, at each end. If this dimension differs by more than $\frac{1}{2}$ inch (6.4 mm) at each end, adjust lower links of tractor to level side-to-side.

Note the current height for step 7, and what lowering would be required to make that 26 inch (66 cm).

5. Check front-to-back level at top of main tool bar. If unlevel, adjust top of tractor three-point to level.
6. Pull forward slowly, and lower the planter to approximately 26 inch (66 cm). Stop the tractor and set the parking brake.
7. Check the tool bar height ②. Adjust the hitch height until it is 26 inch. If available, set a hitch stop control to capture this height.
8. Check that the row units are running level with the ground.
9. Check that the gauge wheels are all in solid ground contact, tires slightly compressed, and that the springs are slightly compressed from the length checked at step 2.

Hitch configuration during planting can vary between tractor models, and due to field conditions. Great Plains recommends starting with the hitch set to Float or Position/Depth Control (and not Load or Draft Control).

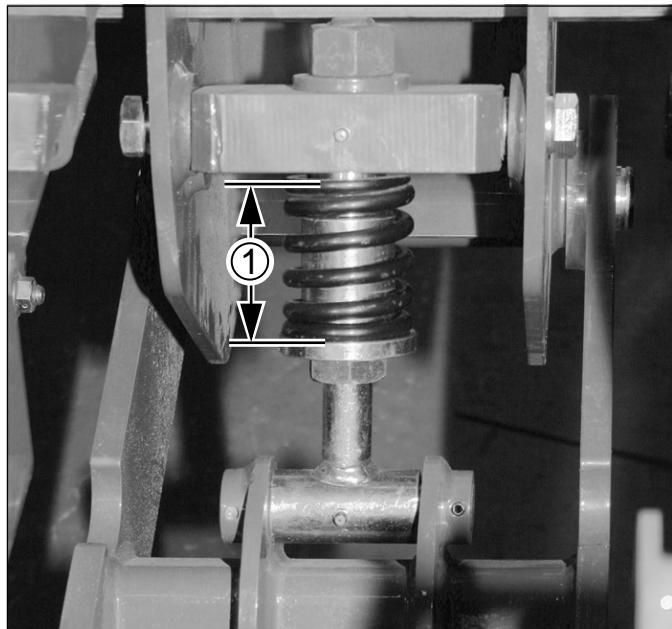


Figure 10
Gauge Wheel Yoke

31053

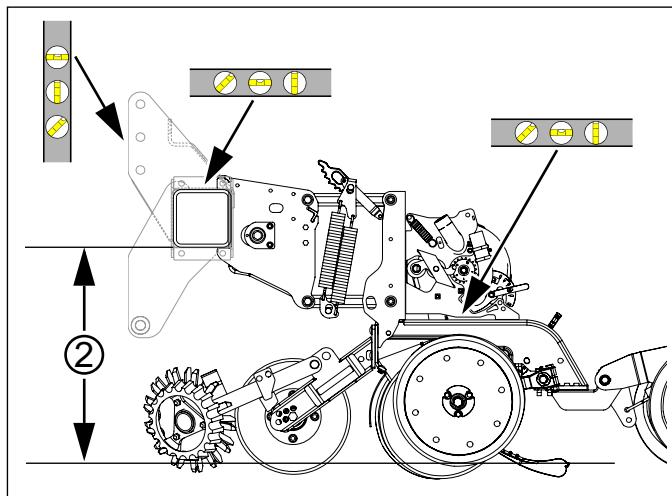


Figure 11
Tool Bar Height and Leveling

31051

Monitor Setup

Refer to Figure 19

The standard DICKEY-john® PM300 system monitors the following elements of a YP4-6-825A3P planter:

- Seeds at each row unit seed tube.
- Ground speed.

See “**Seed Monitor Console Installation**” on page 113.

Refer to the DICKEY-john® PM300/PM332/PM400 Operator’s Manual for monitor operations.

After installation, and prior to first field use, the monitor must be setup with the row spacing and speed sensor constant, as well as your preferences for information display. Row count is auto-assigned, but any other factory defaults are not likely to be correct for your planter.

Row spacing data may be found in the Appendix.

For speed setup, Great Plains recommends using the 400-foot calibration described in the DICKEY-john® manual, rather than using a theoretical “# of pulses”. Perform the calibration run in representative field conditions, as soil conditions, surface looseness and other tillage practices can cause variations in the effective rolling radius of the ground drive wheel.

Prior to each planting session, set any desired limits for speed and population for the current crop.

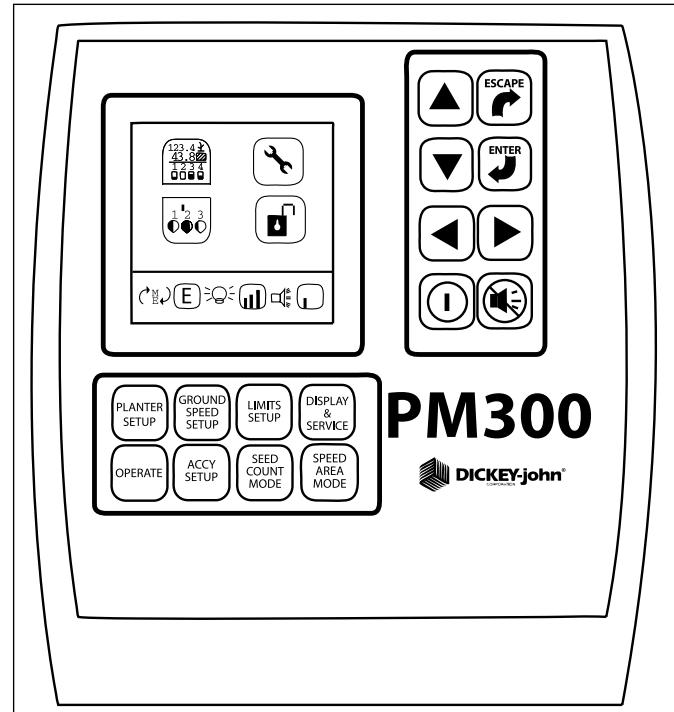


Figure 12
Monitor Primary Screen

29971

Marker Setup (Option)

Prior to first use, check and adjust:

- “**Marker Speed Adjustment**” on page 114.

Prior to first use, and whenever changing row spacings, set or reset:

- “**Marker Extension**” on page 115.

Prior to each planting session, check and adjust:

- “**Marker Disk Adjustment**” on page 42.



Operating Instructions

This section covers general operating procedures. Experience, machine familiarity, and the following information will lead to efficient operation and good working habits. Always operate farm machinery with safety in mind.

Pre-Start Checklist

Perform the following steps before transporting the YP4-6-825A3P planter to the field.

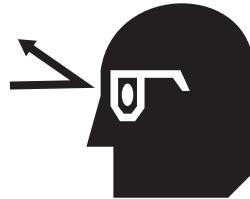
- Carefully read “**Important Safety Information**” on page 1.
- Install seed disks appropriate for crop. See “**Air-Pro® Meter Disk Installation**” on page 57.
- Lubricate planter as indicated under “**Lubrication**” on page 86.
- Check all tires for proper inflation. See “**Torque Values Chart**” on page 103.
- Check all bolts, pins, and fasteners. Torque as shown in “**Torque Values Chart**” on page 103.
- Check planter for worn or damaged parts. Repair or replace parts before going to the field.
- Check hydraulic hoses, fittings, and cylinders for leaks. Repair or replace before going to the field.

Raising/Lowering Planter

The planter is raised and lowered using the tractor 3-point hitch.

In field conditions, drive forward while lowering openers into ground. Never back up with openers in ground.

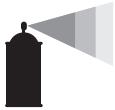
Hitch configuration during planting can vary between tractor models, and due to field conditions. Great Plains recommends starting with the hitch set to Float or Position/Depth Control (and not Load or Draft Control).



WARNING

High Pressure Fluid Hazard:

Relieve pressure and shut down tractor before connecting, disconnecting or checking hydraulic lines. Use a piece of paper or cardboard, NOT BODY PARTS, to check for leaks. Wear protective gloves and safety glasses or goggles when working with hydraulic systems. Escaping fluid under pressure can have sufficient pressure to penetrate the skin causing serious injury. If an accident occurs, seek immediate medical assistance from a physician familiar with this type of injury.



NOTICE

Machine Damage Risks:

Always fold markers (page 33) before raising or lowering.

Always raise the planter for any reverse/backing.

Except on pavement, begin forward motion before lowering, as rows move backward slightly as arms swing up.

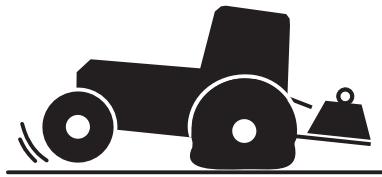
Transport

DANGER

Loss of Control Hazard:

Do not transport with insufficient ballast or with an inadequate tractor.

Check that your tractor has enough ballast for the weight of the drill. A tractor with insufficient ballast has insufficient traction at the front wheels, causing loss of control, leading to a serious road accident, injury or death. Refer to your tractor operator manual for ballast requirements.



CAUTION

Braking and Loss of Control Hazard:

Do not exceed 20 mph (32 kph).



Check that tractor is rated for the fully-ballasted load. An inadequate tractor may be damaged by over-loading. It is also at risk for loss of control in turns and braking, leading to a serious road accident, injury or death.

The planter can weigh nearly 11,000 pounds (5000 kg), depending on configuration and seed load. The tractor MUST be rated and ballasted for the load. Do not tow if planter exceeds the load rating of the vehicle. See tables on next page for typical configuration weights.

Transport Steps

Transport only with markers stowed (page 33).

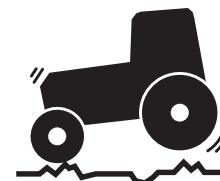
1. Check that planter is securely hitched to a sufficient tractor (page 13).
2. Verify correct operation of lights.
3. Fold markers if unfolded (Option, page 33).
4. Raise planter (page 20).

NOTICE

Increased Hazards and Wear Risks:

Seed may be loaded prior to travel, but increases stopping distance, increases the need for caution in turns and braking, and increases tire wear.

5. If any seed is in hoppers or delivery hoses, close seed inlet shutters at meters (page 58).
6. Plan the route. Avoid steep hills.
7. Always have lights on for highway operation.
8. Do not exceed 32 kph (20 mph). Comply with all national, regional and local laws when traveling on public roads.
9. Remember that the planter may be wider than the tractor. Allow safe clearance.
10. Transport slowly over uneven or rough terrain.



Typical Planter Weights

Approximate Weights of

Representative Configurations	YP425A3P-								
	-0470	-0430	-08TR	-0436	-0836	-0438	-0838	-0440	-0840
Base Planter	1500 kg	3300 lb	4600 lb	3000 lb	4800 lb	3000 lb	4800 lb	3600 lb	4800 lb
Typical ¹ Empty	1600 kg	3500 lb	4900 lb	3100 lb	5100 lb	3100 lb	5100 lb	3700 lb	5100 lb
Typical ¹ Full	1700 kg	3800 lb	5500 lb	3400 lb	5700 lb	3400 lb	5700 lb	4000 lb	5700 lb
Maximum ² Empty	1900 kg	4200 lb	5800 lb	3900 lb	6000 lb	3900 lb	6000 lb	4500 lb	6100 lb
Maximum ² Full	2100 kg	4500 lb	6500 lb	4200 lb	6700 lb	4200 lb	6700 lb	4800 lb	6700 lb

Center of Gravity is approximately 36in aft of hitch.

1. Typical: UM Coulters. No Markers or Row Cleaners.
2. Maximum: UMC+RC, Markers.

Note: Weight of a specific planter can vary by hundreds of pounds, depending on installed options and material loaded.

Approximate Weights of

Representative Configurations	YP625A3P-								
	-0670	-0630	-12TR	-0636	-1236	-0638	-1238	-0640	-1240
Base Planter	2000 kg	4300 lb	6200 lb	4200 lb	6100 lb	4200 lb	6100 lb	4200 lb	6100 lb
Typical ¹ Empty	2100 kg	4500 lb	6600 lb	4500 lb	6500 lb	4500 lb	6500 lb	4500 lb	6500 lb
Typical ¹ Full	2300 kg	5000 lb	7500 lb	4900 lb	7500 lb	4900 lb	7500 lb	4900 lb	7500 lb
Maximum ² Empty	2500 kg	5400 lb	7800 lb	5300 lb	7700 lb	5300 lb	7700 lb	5300 lb	7700 lb
Maximum ² Full	2700 kg	5900 lb	8700 lb	5800 lb	8700 lb	5800 lb	8700 lb	5800 lb	8700 lb

Center of Gravity is approximately 0in aft of hitch.

1. Typical: UM Coulters. No Markers or Row Cleaners.
2. Maximum: UMC+RC, Markers.

Note: Weight of a specific planter can vary by hundreds of pounds, depending on installed options and material loaded.

Approximate Weights of

Representative Configurations	YP825A3P-								
	-0870	-0830	-16TR	-0836	-1636	-0838	-1638	-0840	-1640
Base Planter	2300 kg	5000 lb	7400 lb	5500 lb	8000 lb	5500 lb	8000 lb	5500 lb	8000 lb
Typical ¹ Empty	2300 kg	5300 lb	8100 lb	5800 lb	8600 lb	5800 lb	8600 lb	5800 lb	8600 lb
Typical ¹ Full	2600 kg	5900 lb	9300 lb	6400 lb	9800 lb	6400 lb	9800 lb	6400 lb	9800 lb
Maximum ² Empty	2800 kg	6300 lb	9500 lb	6900 lb	10100 lb	6900 lb	10100 lb	6900 lb	10100 lb
Maximum ² Full	3100 kg	6900 lb	10700 lb	7500 lb	11300 lb	7500 lb	11300 lb	7500 lb	11300 lb

Center of Gravity is approximately 0in aft of hitch.

1. Typical: UM Coulters. No Markers or Row Cleaners.
2. Maximum: UMC+RC, Markers.

Note: Weight of a specific planter can vary by hundreds of pounds, depending on installed options and material loaded.

Loading Materials

Hopper Operations (s/n B1014R+)

Refer to Figure 15 and Figure 16

Hopper lids ①:

- the lids have two spring clips, one at each end ③.
- there is a molded handle at the rear end ② of the hopper lid (although the lid is reversible).

To open a hopper:

- Grasp the handle and snap lid off.
- Park the lid lengthwise on the side lip of the hopper, using the hooked ends of each spring clip inside the lid (see Figure 18 on page 25).

The seed hoppers themselves are designed to be removed, but are not removed for routine operations.

Loading Seed (1.6 bu.hoppers)

- Install correct seed disks (page 57).
- Check that each hopper is correctly seated and secured:
 - front and rear mounting bolts secured
 - hopper discharge opening lined up with
 - seed tube
- Open hopper lid ①.
- Inspect the hopper for leftover seed and debris. Clean out anything other than the seed to be planted. See “Material Clean-Out” on page 75.

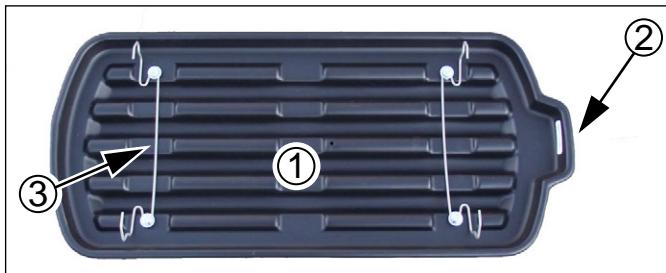


Figure 13
Hopper Lid

32446

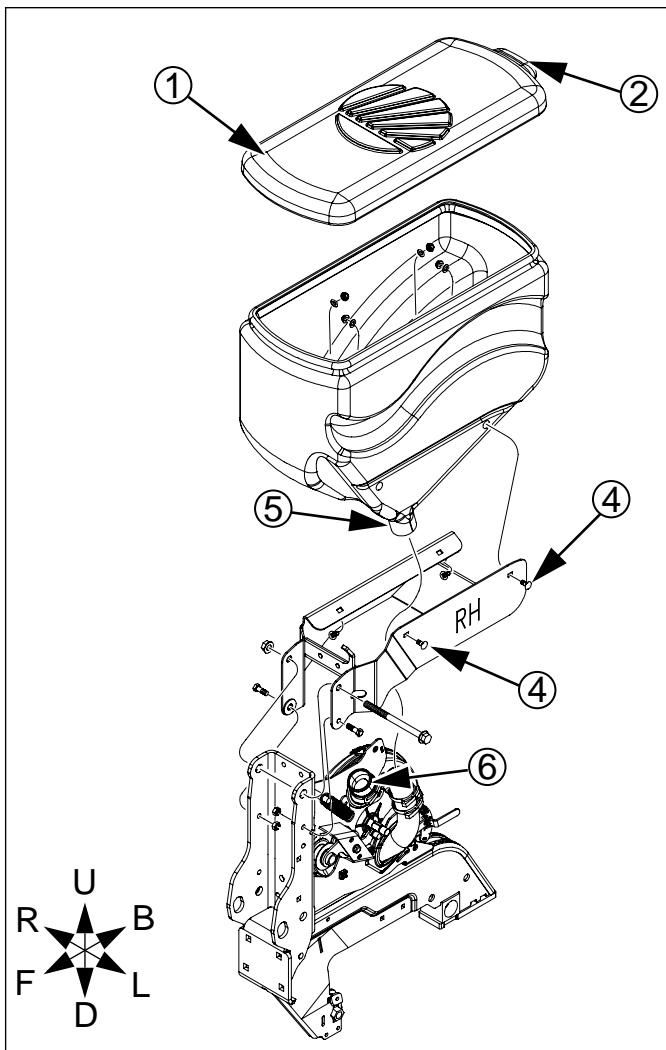


Figure 14
Air-Pro® Row Hopper
(serial number B1014R+)

32233

Loading Materials

Hopper Operations (s/n B1013R-)

Refer to Figure 15 and Figure 16

Hopper lids ① have distinct ends:

- the hinge end ③ (with two lugs) mates with the front end of the hopper.
- the latch end ② (with a single lug) mates with the rear end of the hopper.

To open a hopper:

1. Pull the rear of the lid edge to the rear.
2. Swing the lid up at rear.
3. Disengage the lid at the front lugs.
4. Park the lid on the front lip of the hopper, using the hook-plate feature inside the lid (see Figure 17 on page 25).

The seed hoppers themselves are designed to be removed, but are not removed for routine operations.

Loading Seed (1 bu.hoppers)

5. Install correct seed disks (page 57).
 6. Close all seed inlet shutters (page 58).
 7. Check that each hopper is correctly seated and secured:
 - ④ pivot hooks engage at front,
 - ⑤ latch engaged at rear,
 - ⑥ seed hose secured to
 - ⑦ discharge weldment with
 - ⑧ clamp.
 8. The hopper slide gate ⑨ may be left open (by pulling back), and doing so slightly increases seed capacity.
- Note: If slide gate is open for seed loading, seed inlet shutters must be closed unless the planter is already at the field. Transporting with both gates and shutters open can plug meters.
9. Open hopper lid ①.
 10. Inspect the hopper for leftover seed and debris. Clean out anything other than the seed to be planted. See “**Material Clean-Out**” on page 75.

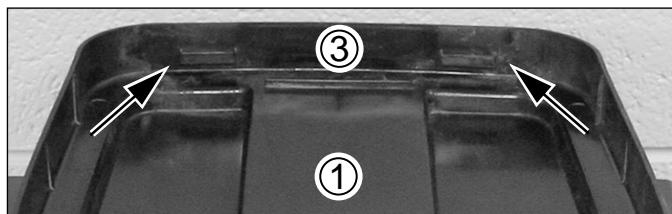


Figure 15
Hopper Lid Hinge Lugs

28131

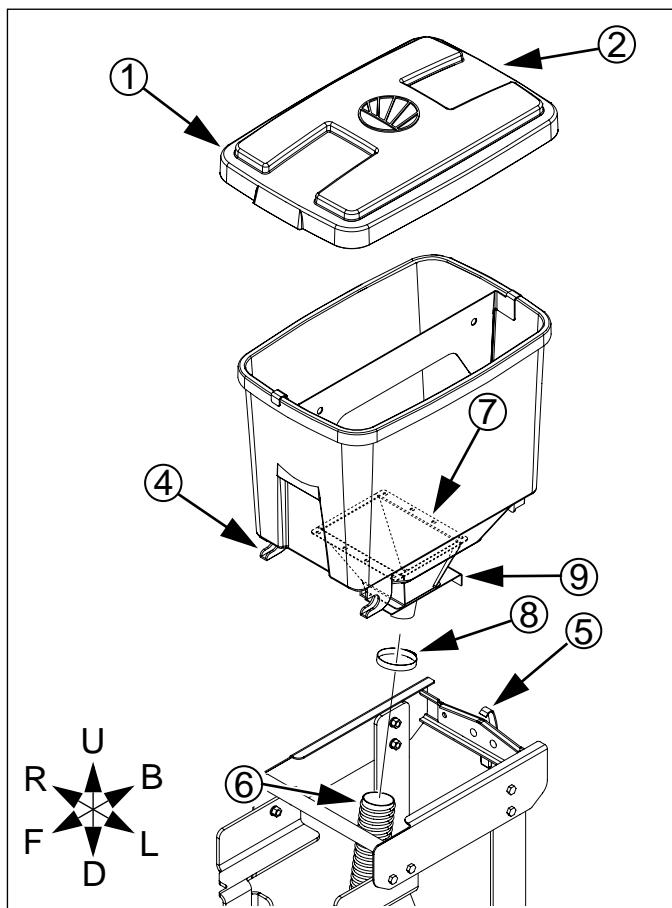


Figure 16
Air-Pro® Row Hopper
(serial number B1013R-)

29975

Loading Seed, continued

CAUTION

Possible Agricultural Chemical Hazards:

Read and follow all supplier cautions for safe handling of treated seed.

CAUTION

Irritant and Chronic Exposure Hazards:

Do not mix lubricants into seed with hands or any part of body. Wear protective equipment. Use tools. See page 90.

11. Pre-mix seed and lubricant. For clean seeds other than milo, cotton, and sunflowers sprinkle $\frac{1}{4}$ cup of Ezee Glide Plus per bushel or unit (60 ml per 35 liters) of seed.

For milo, cotton, and sunflowers double the application to $\frac{1}{2}$ cup (or more) per bu.or unit (120 ml per 35 liters) of seed.

NOTICE

Population Risk:

The seed must be properly lubricated, starting with the first seed through the meter. If unable to pre-mix prior to loading, pre-mix at least one gallon (4 liters) per hopper, and load this seed first. Fill the hoppers to half full with fresh seed. Add half the lubricant and stir. Complete filling the hoppers and sprinkle the remaining lubricant on top.

12. Add seed and lubricant to hoppers.

Refer to Figure 13 and Figure 14 on page 23

For 1.6 bu.hoppers (s/n B1014R+)

13. Close lids. Position front end of lid over front end lip of hopper. Snap lid firmly in place.

Refer to Figure 15 and Figure 16 on page 24

For 1 bu.hoppers (s/n B1013R-)

14. Close lids. With lid tilted up at a slight angle, hook the two front hinge lugs under the front hopper lip. Swing down, keeping fingers clear of lug, and latch the single rear lid lug on rear hopper lip.

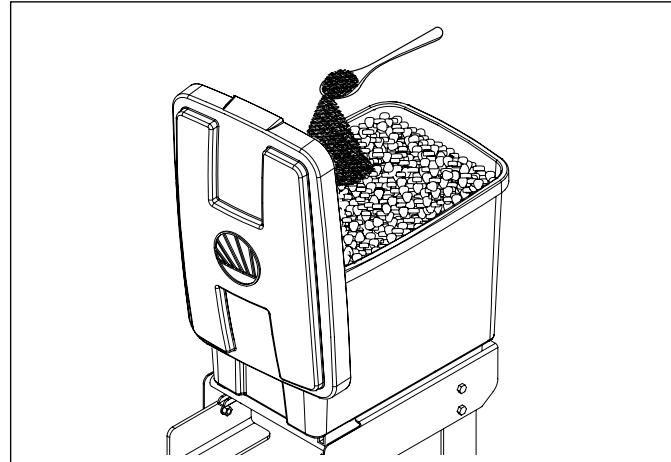


Figure 17

Adding Seed Lubricant
1 bu.Hoppers
(serial number B1013R-)

29976



Figure 18

1.6 bu.Hoppers
(serial number B1014R+)

32447

NOTICE

Equipment Loss Risk:

Check that all 3 lid lugs are completely under the hopper lip, or the lid may come off in transport.

Monitor Operation

Refer to Figure 19

The standard Dickey-john® PM300 system monitors the following elements of a YP4-6-825A3P planter:

- Seeds at each row unit seed tube:

Medium and larger seeds are individually counted with high accuracy. Small seed sensing may be limited to seed stoppage ("blockage") detection.

- Ground speed:

The standard magnetic pickup^a at the ground drive allows the monitor to calculate and report population.

Once setup for the planter and your display preferences, and configured for the current crop rates/limits, the monitor is typically used in the "OPERATE" mode. Refer to the Dickey-john® PM300/PM332/PM400 Operator's Manual for monitor operation details.

Both the Dickey-john® manual and this manual contain trouble-shooting information for apparent monitor problems. Check both manuals, as the focus and content is not identical.

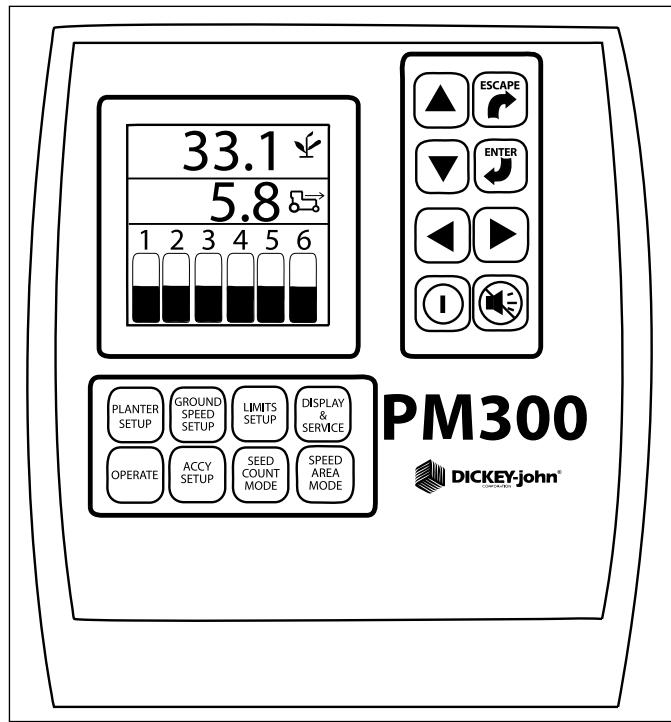


Figure 19
Monitor: Typical Operate Screen

29972

a. An optional radar speed sensor is available, as are Y-cables to accept input from an existing radar on the tractor. The magnetic pickup may be preferred, as both speed and seed flow fall to zero at lift. With radar, the monitor cannot tell that seeding should have stopped. You may experience more nuisance alarms with radar.

Air System Operation

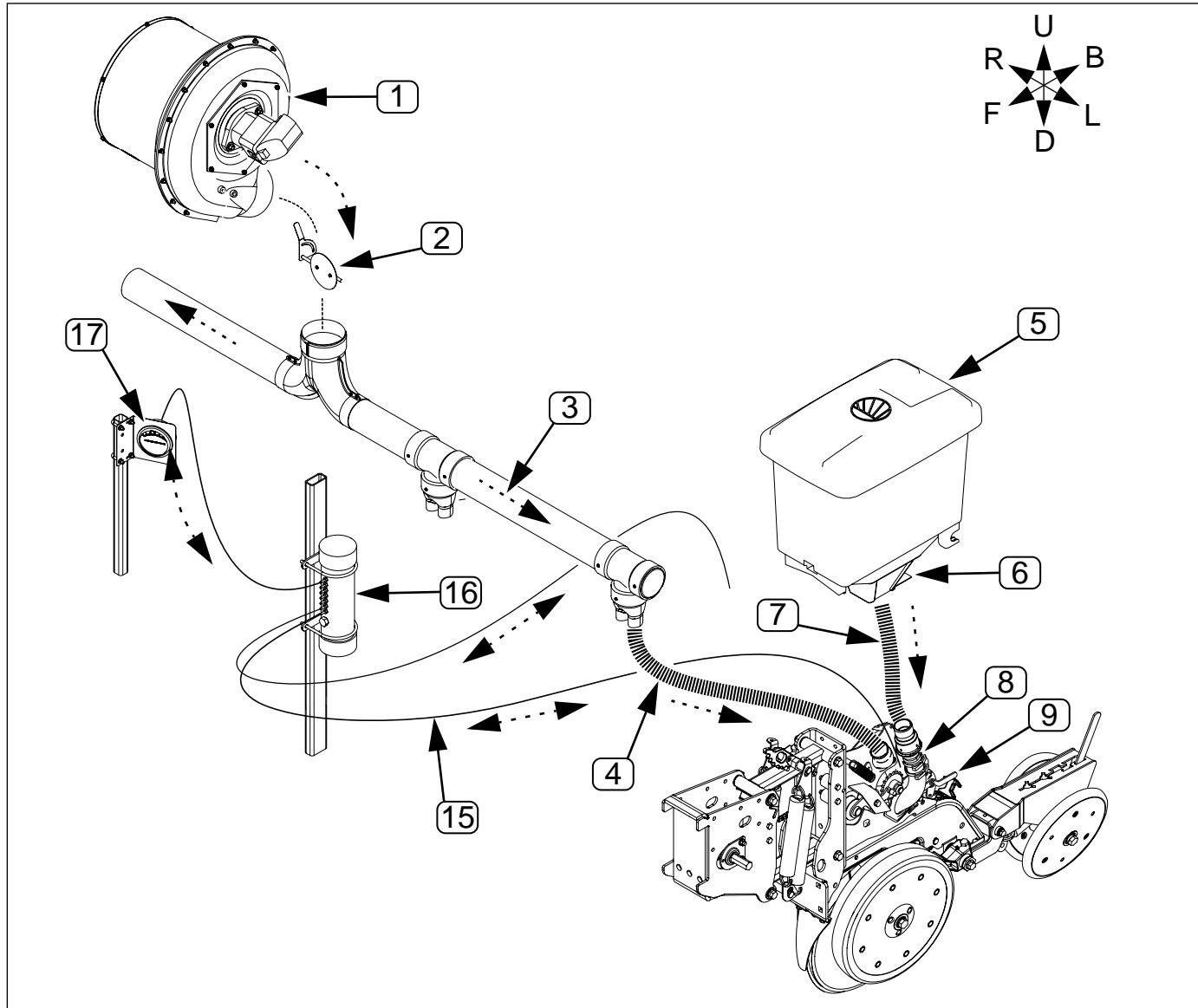


Figure 20
Planter Air System for Air-Pro® Seed Metering

29973

Meter Pressurization System Elements (→ shows air direction)

① Hydraulic Fan	⑦ Seed Hose	⑬ Seed Tube Sensor (Figure 21)
② Butterfly Valve	⑧ Air-Pro® Seed Meter	⑭ Sensor Port (Figure 21)
③ Meter Pressurization Air	⑨ Seed Inlet Shutter	⑮ Pressure Sensor Lines
④ Row Pressurizing Tube	⑩ Seed Pool (Figure 21)	⑯ Pressure Sensor Chamber
⑤ Seed Hopper	⑪ Disk Seed Pocket (Cell)	⑰ Magnehelic® Pressure Gauge
⑥ Slide Gate	⑫ Seed Hose (Figure 21)	

Air and Seeding System Overview

Refer to Figure 20, on page 27, and Figure 21.

The hydraulic fan **1** supplies air exclusively for meter operation. Fan rpm is operator-adjusted (page 31), normally via the tractor circuit's hydraulic flow control.

A manually-adjusted butterfly valve **2** is provided at the fan outlet. See page 31 for valve adjustment.

The manifold system **3** delivers fan air across the planter. It includes passive internal design features to balance pressure across the planter.

Separate pressurization tubes **4** route manifold air to each row unit.

Seed is delivered from the seed box **5** by gravity through the sliding seed tubes **7**, to the inlet of the Air-Pro® seed meter **8**.

A manually adjusted inlet shutter **9** controls the size of the seed pool **10** at the base of the meter. The shutter also minimizes air loss back up the seed inlet tube, and is also used during row shut off. See page 55 for shutter adjustments.

At the meter, pressurization air exits the meter through the seed pockets **11** of the disk, and holds seed in the pockets until released above the seed tube **12**.

In the seed tube, the seed sensor **13** detects passage of seeds. Medium size and large seeds are counted individually. With smaller seeds, most are detected, allowing the monitor to detect stoppages.

Several rows have a pressure sensor port **14** for the meter pressurization system. A line **15** from each of these rows is connected to a chamber **16** to average the pressures.

The averaged pressure is reported by a Magnehelic® gauge **17** visible to the tractor operator. See page 43 for use of the gauge in making fan adjustments.

A sensor **13** in each seed tube reports seed passage to the seed monitor. Larger seeds are counted individually. For smaller seeds, the system acts as a blockage monitor.

Note: Use of the special blank disk (page 59), and closing the seed inlet shutter (page 55), are particularly important when a sensor row is shut off.

Note: On any row, running a normal disk with no seed, or with an open empty inlet, unbalances the air system. Doing either at a sensor row causes the gauge to mis-report as well.

Note: Do not operate in the ground with the fan shut off, or with insufficient manifold pressure. The meters will completely fill with seed. Meter clean-out may be required to resume normal operation.

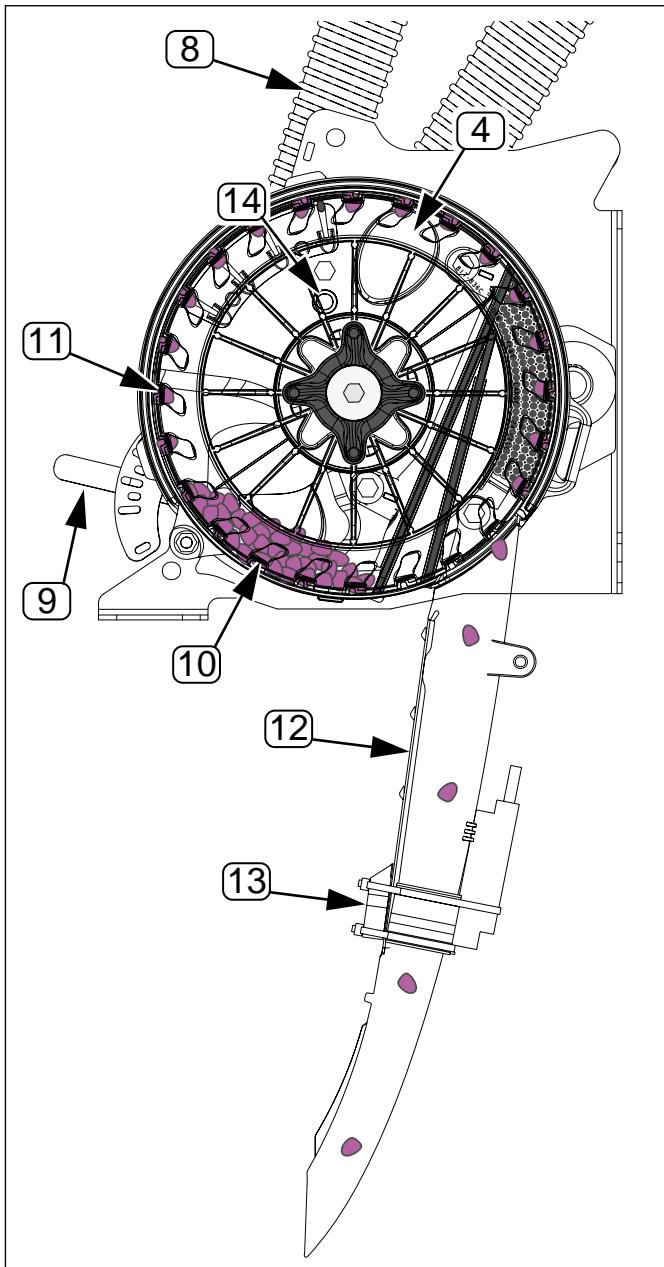


Figure 21
Air-Pro® Meter, Disk Side

31040

Fan Circuit Operation (S/N-)**Applies to planters with serial numbers:**

(YP3P425A s/n B1004M-)

(YP3P625A s/n B1006P-) (YP3P825A s/n B1007R-)

See also "Fan and Adjustment" on page 43.

Refer to Figure 22

Three hydraulic hoses serve the fan, and must be properly connected for the fan to operate in the correct direction ①, at recommended speeds, and without damage. See "Hydraulic Hose Hookup" on page 14.

1. Always connect the case drain line ② first.

This line protects the outer shaft seal of the hydraulic motor. The case drain is a small line to the hitch, provisioned with a specialized low-seep flat-face case drain Quick Disconnect. Pressure spikes during motor operation, and pressure cycles due to temperature change are bled off by the case drain.

NOTICE***Motor Seal Damage Hazard***

Do not apply pressure to the case drain line. Do not change the special QD connector. A restricted or sealed case drain line will promptly result in motor seal damage.

2. Connect the motor return line ③ second, to sump.

The planter includes a $1\frac{1}{16}$ inch low back-pressure QD coupler set. Install the receptacle on a tractor sump port, and not at a normal remote return port. The unusual size aids in ensuring correct connection, so that the motor return line handles high volume at low back-pressure, ensuring full motor performance.

3. Connect the motor inlet line ④ to a tractor remote capable of 4.5 gallons/minute. If a priority remote is available, use it for the fan.
4. The fan hydraulic circuit includes a check valve ⑤, which provides a relief path for oil at motor shutoff. If the fan is connected in reverse, flow through this valve results in low fan rpm, providing strong indication reversed connection.

Correct fan direction is shown at ①. If reversed fan is suspected, observe it during shutoff, as the direction of motion is easier to see at lower rpms as it slows to a stop (initial startup is virtually instantaneous, making observation at start difficult).

Fan speed is controlled by the tractor circuit and butterfly valve (and not the seed monitor).

You may stop the fan by setting the circuit to neutral or float. The check valve slows the blades to a stop by locally recirculating the oil.

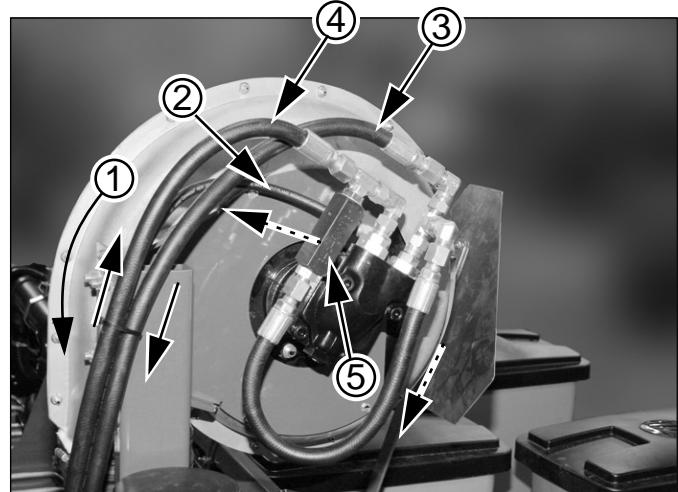


Figure 22
Hydraulics at Fan

31029

If the fan is connected in reverse, it may not run at all (due to no oil source at the return connection). If oil is present, oil bypass at the check valve ⑤ prevents the fan from reaching high rpm. A reversed fan may send some air to the meters, but is incapable of providing reliable air flow for planting.

Fan speed can change as oil heats to operating temperature. Re-check meter pressurization more often during early operations.

Fan Circuit Operation (S/N+)

Applies to planters with serial numbers:

(YP3P425A s/n B1005M+)

(YP3P625A s/n B1007P+) (YP3P825A s/n B1008R+)

See also "Fan and Adjustment" on page 43.

Refer to Figure 23

→ Operating flow

→ Shut-off flow (fan coasting to stop)

Two hydraulic hoses serve the fan, and must be properly connected for the fan to operate in the correct direction ①, and at recommended speeds. See "Hydraulic Hose Hookup" on page 14.

1. Connect the motor return line ③, to remote circuit return (Extend port) or to sump.

The planter includes a pressure-relief QD coupler for the return line. This prevents motor damage in the event that the return line is not connected, or is connected incorrectly; however, an oil spill results if the return line is not correctly connected.

2. Connect the motor inlet line ④ to a tractor remote capable of 20 liters per minute. If a priority remote is available, use it for the fan.
3. The fan hydraulic circuit includes a check valve ⑤, which provides a relief path for oil at motor shutdown. If the fan is connected in reverse, flow through this valve results in low fan rpm, providing strong indication reversed connection.

Correct fan direction is shown at ①. If reversed fan is suspected, observe it during shutdown, as the direction of motion is easier to see at lower rpms as it slows to a stop (initial startup is virtually instantaneous, making observation at start difficult).

Fan speed is controlled by the tractor circuit and butterfly valve (and not the seed monitor).

Note: Fan speed can change as oil heats to operating temperature. Re-check meter pressurization more often during early operations.

You may stop the fan by setting the circuit to Neutral or Float. The check valve slows the blades to a stop by locally recirculating the oil.

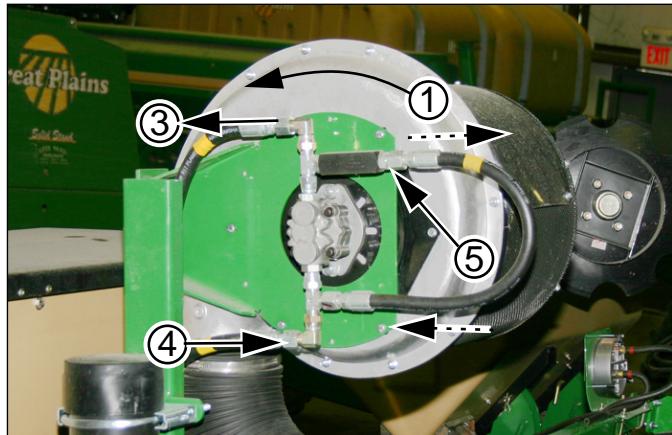


Figure 23
Hydraulics at Fan

31869

If the fan is connected in reverse, it may not run at all (due to no oil source at the return connection). If oil is present, oil bypass at the check valve ⑤ prevents the fan from reaching high rpm. A reversed fan may send some air to the meters, but is incapable of providing reliable air flow for planting.

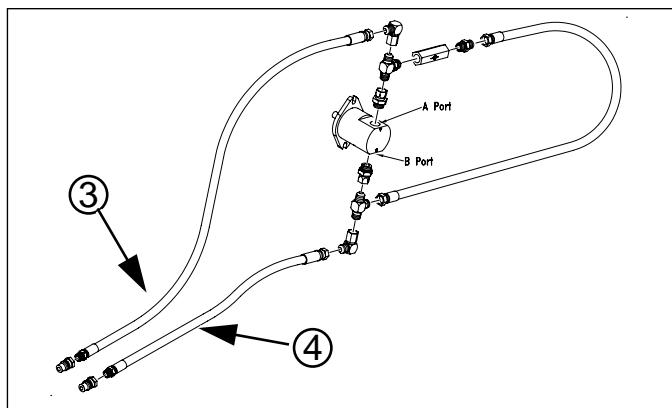


Figure 24
Fan Hoses

31886

Fan General Operating Information

Adjust the fan to provide the meter pressurization recommended for the seed disk, seed, and seed density. See the tables and charts for recommended values in the **Seed Rate Manual**.

Normal gauge readings are in the 0.8 inch to 4.0 inch water pressure range, and vary considerably with crop.

Refer to Figure 25

Use tractor remote hydraulic valve flow control to set fan speed and butterfly valve adjustment to make fine adjustments to meter pressurization. Precise technique depends on tractor capabilities:

- The objective is to obtain recommended meter pressurization, and maintain it during end-of-pass marker fold, lift and turn.
- For any setup adjustment, operate the tractor engine at typical field rpms, and not at idle.
- Preset the butterfly valve. Use any setting that you previously developed for the crop/disk/range (see Note at right), otherwise:

If the tractor has fine control of remote flow rates, and consistent flow at varying tractor engine rpm, initially set the butterfly valve to 30° or less.

If the tractor has only coarse control of flow, initially set the butterfly valve to 45°.

- Set the fan circuit flow to bring the gauge reading to near the recommended value.
- Fine tune the meter pressurization with the butterfly valve.
- If the tractor has marginal flow available, or the list circuit has priority, you may need to experiment with combinations of fan flow and butterfly valve settings.

Always start the fan with a low flow setting.

Gradually bring fan up to the recommended initial meter pressurization.

At excessive rpm, too much air flow can cause:

- oil heating
- slow lift times

If desired pressure cannot be reached, or requires unusually high oil flow at low butterfly valve settings, chances are the fan is running backwards. Reverse the inlet/return lines at the hitch.

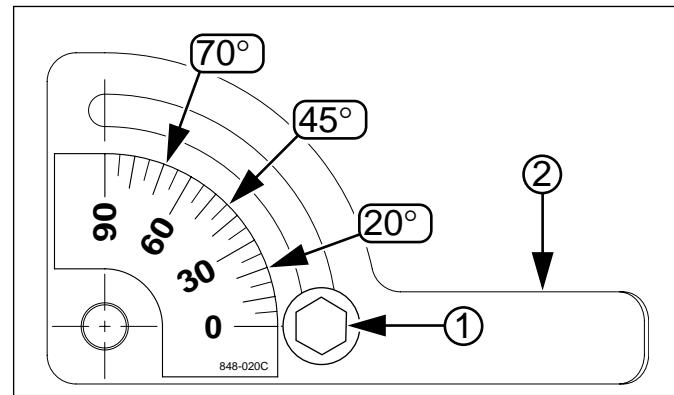


Figure 25
Fan Butterfly Valve Handle

25137

Butterfly Valve Operation:

To adjust, loosen bolt ① and rotate the handle ②. Re-tighten bolt.

0° is wide open - maximum air flow.

90° is closed - minimum air flow.

The valve provides the most effect at settings between 20° and 70°.

Starting at 30° reduces the fan workload.

Starting at 45° provides the most adjustment range up or down.

Note: You may find that different crop, seed disk and rate range combinations need different valve settings. If so, make a note of the valve angle on the chart in the Seed Rate manual.

NOTICE

Low Population Risk at Turns:

The fan requires up to 4.5 gpm. This figure does not include oil for lift/lower or oil for marker operation. Aggressive lift/lower operations, and simultaneous lift/marker operations, can reduce fan rpm below that needed to pressurize meter disks. If seed falls out of pockets, low population bands will occur shortly after turns.

Unless the tractor has generous oil flow capacity, raise/fold markers before lift, and lift slowly. Watch meter pressurization and tune operations to keep it at planting levels in turns.

Air-Pro® Meter Operation

Refer to Figure 26

The meter disk is driven, top forward, by a chain drive (not shown) always connected to the section drive shaft. At non-planting rows, use a blank disk (page 59).

Seed is air-delivered to the inlet above the air release screen ①. Seed customarily fills to the top of the screen, blocking further air flow from the seed delivery system, until the seed level falls below the screen.

Seed enters the meter at the seed inlet shutter ② (if open), and forms a seed pool ③ at the base of the meter. Seed pool size is controlled by the shutter handle ④ setting (which is the only user adjustment at the meter). Initial shutter settings are given in the seed rate charts.

Meter pressurization air enters the meter at ⑤, and exits the meter primarily at the seed pockets in the seed disk. The pressure differential holds seed in the disk pockets ⑥ rising from the seed pool. Excess seed at a pocket is picked off by the tickler brushes ⑦.

The strip and drop brushes block meter pressurization air. Seeds passing the drop brush ⑧ are free to fall into the seed tube, and are detected by the seed sensor ⑨.

Meter Operation

1. Install disks for your crop/population range per the Seed and Fertilizer Rate manual and the instructions beginning on page 57 of this manual.
2. Open the shutter at planting rows to the recommended initial setting (from the Seed Rate charts). At unused rows, install a blank disk (page 59) and close shutter.
3. Set sprocket indexing if staggering a twin-row crop (see Seed and Fertilizer Rate manual for details).
4. Operate fan to achieve suggested manifold pressure (Seed and Fertilizer Rate manual, and page 43).
5. Open slide gates to fill meters (page 24).
6. With all rows primed, rotate meters one turn to fill pockets to edge of drop brush. Rotate the drive shaft (top forward) with a $\frac{7}{8}$ inch (23 mm) wrench, or raise and rotate ground drive wheel (top forward).
7. Leave fan running (to keep seed in top pockets). Re-install rain covers. Commence planting. Meter operation is automatic from this point on.

See also:

"Seed Pool Troubleshooting" on page 65,
"Meter Clean-Out" on page 76, and
"Meter Brush Maintenance" on page 77.

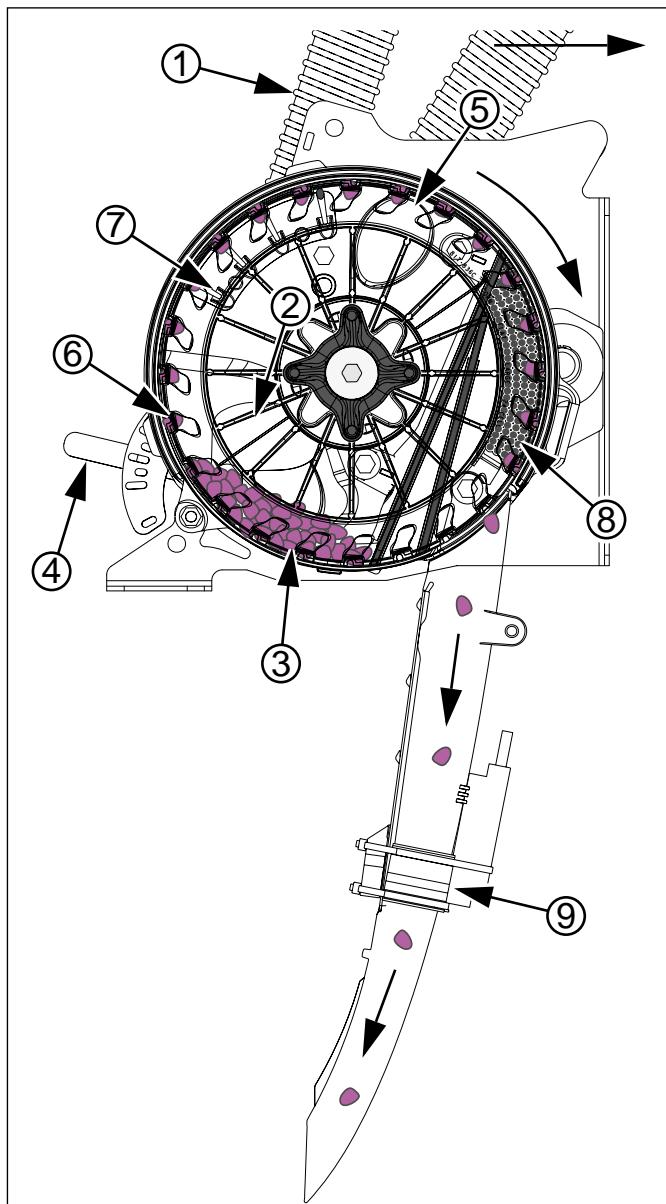


Figure 26
Air-Pro® Seed Meter at Row

29825

Marker Operation (Option) S/N-

THIS PAGE APPLIES ONLY TO MODELS:
(YP3P425A s/n B1004M-)
(YP3P625A s/n B1006P-) (YP3P825A s/n B1007R-)

Before Operating Markers

- Make sure cylinders are properly bled. See “**Marker Maintenance (Option)**” on page 82.
- This section presumes correct marker extension for your pass spacing. If this has not been set, or needs to be changed, see “**Marker Extension**” on page 115.
- Markers are equipped with an automatic sequence valve that controls which side activates, as well as marker deployment speed. Marker folding speed is adjusted via set screws on the sequence valve body. Excessive folding speed may damage markers. Set speed prior to first field operations. See “**Marker Speed Adjustment**” on page 114.



WARNING

Overhead, Crushing and Sharp Object Hazards:

Do not allow anyone to stand near or beyond the end of the wings during marker operations. There is risk of serious injury or death for anyone in the path of a marker. Marker arms are heavy, are under tremendous hydraulic power, and may move suddenly if the hydraulic system is damaged or needs bleeding. Marker discs may be sharp.

Marker Unfold (one side)

1. Move tractor hydraulic control (lever or switch) for the marker circuit (typically to Extend). Hold until marker is completely unfolded. Do not leave tractor control in detent.
2. If the marker side operating is not the desired side, let it unfold part way, and move the tractor's circuit control to Retract. When the marker is folded, move the circuit control to Extend to activate the other side.

Both Sides Unfolded

With both markers in the upright/tilted positions:

1. Unfold either side, and when completely deployed:
2. Move lever/switch to Retract momentarily, and return to Extend to deploy other side.

Row Marker Operation

To alternate which side is marked:

1. Move the tractor's circuit control to Retract. Hold until marker is folded.
2. Move the tractor's circuit control to Extend. Hold until the new side's marker is fully unfolded.
3. Return tractor control to neutral/off.

Folding The Markers

If your planter has markers, fold them before performing a lift operation.

1. Move the tractor's circuit control to Retract. Hold until marker is folded.
2. Tilt markers down for transport or storage.

Marker Operation (Option) S/N+

THIS PAGE APPLIES ONLY TO MODELS:

(YP3P425A s/n B1005M+)
(YP3P625A s/n B1007P+) (YP3P825A s/n B1008R+)

Before Operating Markers

- Make sure cylinders are properly bled. See “**Marker Maintenance (Option)**” on page 82.
- This section presumes correct marker extension for your pass spacing. If this has not been set, or needs to be changed, see “**Marker Extension**” on page 115.
- Markers are equipped with an automatic sequence valve that controls which side activates, as well as marker deployment speed. Marker folding speed is adjusted via set screws on the sequence valve body. Excessive folding speed may damage markers. Set speed prior to first field operations. See “**Marker Speed Adjustment**” on page 114.

Marker Unfold (one side)

1. Move tractor hydraulic control (lever or switch) for the marker circuit (typically to Extend). Hold until marker is completely unfolded. Do not leave tractor control in detent.
2. If the marker side operating is not the desired side, let it unfold part way, and move the tractor's circuit control to Retract. When the marker is folded, move the circuit control to Extend to activate the other side.

Row Marker Operation

To alternate which side is marked:

1. Move the tractor's circuit control to Retract. Hold until marker is folded.
2. Move the tractor's circuit control to Extend. Hold until the new side's marker is fully unfolded.
3. Return tractor control to neutral/off.

Marker Controls

The marker controls are in circuit with the lift controls.

The markers raise and lower with the planter.

When the planter is *lowered*:

- One side marker will unfold.
- Hold the hydraulic control until marker is fully extended.

When the planter is *raised*:

- The marker will fold up.
- Hold the hydraulic control until the marker is fully folded.

The next time the planter is lowered the opposite side marker will unfold.



WARNING

Overhead, Crushing and Sharp Object Hazards:

Do not allow anyone to stand near or beyond the end of the wings during marker operations. There is risk of serious injury or death for anyone in the path of a marker. Marker arms are heavy, are under tremendous hydraulic power, and may move suddenly if the hydraulic system is damaged or needs bleeding. Marker discs may be sharp.

Field Set-Up Checklists

Use the following tables to develop a final checklist for your tractor/planter configuration.

Additional or fewer steps may be necessary depending on tractor features, planter options and planting accessories.

Mechanical Checklist (Hitching)	Page
<input type="checkbox"/> Planter hitched	13
<input type="checkbox"/> Parking stands raised	17

Electrical Checklist	Page
<input type="checkbox"/> Verify electrical hookups solid	13
<input type="checkbox"/> Check seed monitor terminal and observe any diagnostic messages	a
<input type="checkbox"/> Option: Verify that, when planter is lowered, optional radar speed sensor is pointed at ground, at an angle approximately 35° below horizontal.	b
a. Refer to monitor manual.	
b. Refer to sensor documentation.	

Hydraulic System Checklist	Page
<input type="checkbox"/> Check tractor hydraulic reservoir full	-
<input type="checkbox"/> Fan case drain Fan return Fan motor pressure side (retract)	16
<input type="checkbox"/> Inspect connections for leaks	-
<input type="checkbox"/> Check fan speed and airflow direction	a
a. Operate fan briefly. Observe rotor blades spinning toward exit port as fan slows to a stop.	

Mechanical Checklist (post-Hitching)	Page
<input type="checkbox"/> Planter leveled	18
<input type="checkbox"/> Marker extension set	115
<input type="checkbox"/> Marker disc angle set	42
<input type="checkbox"/> Markers folded (unless already at start of first planting row)	33

Planter Meter Drive Checklist	Page
<input type="checkbox"/> Check chain lubrication and slack	83
<input type="checkbox"/> Calibrate speed sensor pulses with planter lowered.	a
<input type="checkbox"/> Seeding: Set/check Range and Transmission against rate chart	b
a. Refer to seed monitor manual.	
b. Refer to Seed and Fertilizer Rate manual.	

Air System Checklist	Page
<input type="checkbox"/> Fan butterfly valve set	31
<input type="checkbox"/> Seed loaded. Lids closed.	24
<input type="checkbox"/> Meter shutters open to chart value	55
<input type="checkbox"/> No air leaks (except from seed hoppers)	
<input type="checkbox"/> Hoses and tubing - no sags, no pinches Check both manifold and sensor lines	
<input type="checkbox"/> Hoses fully connected to meters	

Row Units Checklist	Page
<input type="checkbox"/> Preset depth handles alike.	52
<input type="checkbox"/> Preset down force springs alike, except in tracks.	47
<input type="checkbox"/> Option: Set all unit-mounted coulters to $\frac{1}{4}$ inch shallower than opener blades.	50
<input type="checkbox"/> Check coulter alignment to row	51
<input type="checkbox"/> Check closing wheel alignment	62
<input type="checkbox"/> Set press wheels alike, except in tracks.	62
<input type="checkbox"/> Check action and contact of side depth wheels	53
<input type="checkbox"/> Check wheel scraper gaps (if installed)	54
<input type="checkbox"/> Slide gates open	24

Meters Checklist	Page
<input type="checkbox"/> Corn? Check timing of meters for twin-row	a
<input type="checkbox"/> Check chain tension. Re-connect any loose idler tensioning springs.	-
<input type="checkbox"/> Correct disks for seed	a
<input type="checkbox"/> Start fan. Operate at field manifold pressure.	29
<input type="checkbox"/> Rotate meter drive shafts one turn disks with seed.	32

a. Refer to Seed and Fertilizer Rate manual.

Field Operation

Perform all steps in “**Pre-Start Checklist**” on page 20 and “**Field Set-Up Checklists**” on page 35.

First Pass Operation Checklist	Page
1. Slide gates open. Shutters set.	32
2. Raise planter and line up at start of first planting row.	20
3. Prime meters with seed. Leave fan running.	32
4. Unfold marker on next-row side.	33
5. Pull forward, lower planter, and begin planting for a short distance.	20
6. Stop. Assess: • planting depth • seed spacing • press wheel operation	-
7. Make necessary adjustments	38
8. Resume planting.	-

Sharp Field Turns^a Checklist	Page
1. Fold marker	33
2. Raise planter when fold is complete	20
3. Make turn	
4. Lower planter	20
5. Unfold marker on next-row side.	33
6. Resume planting.	

- a. Monitor manifold pressure during end-of-pass operations and turns. Adjust operations as needed to maintain meter pressurization.

Consult seed monitor for alarms during planting. Check that reported rates are consistent with your plan.

When reloading seed, check consumption against anticipated use to that point.

Suspending Planting Checklist	Page
1. Stop tractor	-
2. Fan hydraulic circuit to Float or Neutral	29
3. Hydraulic drive circuit to Float or Neutral	-
4. Fold Marker	33
5. Raise planter	20

Ending Planting Checklist	Page
1. Suspend operations as above, then	
2. Lights ON	-
3. Transport	21

Short-Term Parking

1. Fold markers (page 33).
2. Choose a location with level firm ground. Do not unhitch on a steep slope.
3. Raise planter to just off ground.
4. Lower parking stands to ground and pin (page 17).
5. Lower planter.
6. Set hydraulic circuits to neutral.
7. Disconnect hydraulic lines. Secure them so that they do not touch the ground.
8. Disconnect electrical cables, capping where provisioned.
9. Unhitch.
Restart tractor and pull away from planter.

Long-Term Storage

1. Complete Parking steps (page 37). Park the planter indoors if possible.
2. See “**Material Clean-Out**” on page 75. Clear all seed from seed container, air box, seed delivery system and meters.
3. Close slide gates and latch hopper lids.
4. Remove seed disks from meters (this is primarily to relieve pressure on brushes). Clean disks of residue build-up (see Caution at right). Use mild soap, non-abrasive scrubbers, and hot or warm water. If using sealed storage, dry disks prior to storage.

CAUTION

Possible Chemical Hazard:

Seed disks will have talc and graphite residue, and may have residues of hazardous seed treatments. Do not wash disks where food is prepared, or where cookware or dinnerware is washed. Wear gloves when washing disks. Avoid spray. Although the disks are dishwasher-safe, do not wash them in an appliance also used for food cookware or dinnerware.

5. Tie or tape a small plastic bag over ends of all seed delivery tubes to prevent insects from entering or nesting.
6. Close seed inlet shutters at meters (to prevent pest entry to seed hoses). Thoroughly clean seed and seed treatment residue from seed meters. See “**Meter Clean-Out**” on page 76, for more information.
7. Clean planter of mud, dirt, excess oil and grease.
8. Lubricate all points listed in Maintenance.
9. Apply grease to exposed cylinder rods to prevent rust.
10. Inspect planter for worn or damaged parts. Make repairs and service during off season.
11. Use spray paint to cover scratches, chips, and worn areas on the planter to protect the metal.
12. Cover planter with a tarp if stored outside.



Adjustments

To get full performance from your YP425A3P, YP625A3P & YP825A3P planter, you need an understanding of all component operations, and many provide adjustments for optimal field results. Some of these have been covered earlier in this manual.

Even if your planting conditions rarely change, some of these items need periodic adjustment due to normal wear.

Adjustment	Page	The Adjustment Affects
Frame height	21	Planting depth consistency
Frame level	18	Planting consistency
Air System	27	
Fan Speed	31	Optimal seed distribution
Meter Pressurization (values from SRM ^a)	43	Consistent seed flow and disk singulation
Planting Rate	SRM ^a	Refer to Seed and Fertilizer Rate manual
Marker Adjustments		
Marker Extension	115	Intended swath spacing
Marker Speed Adjustment	114	Reliable marker operation
25AP Row Unit Adjustments		
Opener Depth	52	Planting depth
Row Unit Down Pressure	47	Planting depth uniformity
Row Unit Lock-Up	60	Single/twin-row operation
Row Cleaner Adjustments (Option)	49	Row preparation
Coulter Adjustments (Option)	50	Seed depth uniformity
Opener Disk Adjustments	52	Seed depth, seed-to-soil contact
Side Depth Wheels	52	Seed depth, prevents plugging
Adjusting Gauge Wheel Scrapers	54	Consistent seed furrow depth
Seed Meter Setup and Adjustment	55	Consistent seed population
Seed Firmer Adjustments (Option)	61	Seed-soil contact
Press Wheel Adjustment	62	Effective soil coverage
Monitor Adjustments	PM ^b	Refer to Seed Monitor manual

a. SRM: Seed and Fertilizer Rate manual (401-651B)

b. PM: DICKEY-john® Planter Monitor operator manuals

Setting Material Rates

Full details on rate setting sprocket selection and installation are found in the **Seed Rate Manual** (pub. number 401-651B). This is a summary. Setting the seeding rate requires the following steps:

1. monitor setup
2. seed disk selection,
3. drive speed Range sprockets,
4. Transmission sprockets,
5. inlet shutters
6. meter pressurization,
7. checking seeding rate.

All rate adjustments are performed at the left end of the planter. There are no adjustments at the ground drive assembly.

Planting Rate Details

1. Rate: Monitor configuration:

The seed monitor must be set up with the

- correct row count,
- correct row spacing,
- speed calibration and;
- expected population limits, in order to have accurate rate reports and useful alarms.

See the Seed and Fertilizer Rate manual (401-651B) and the DICKEY-john® Planter Monitor operator (PM) manual.

If you only plant with the factory configuration of the planter, you never need to update row count and spacing. If any rows are unused, adjust the monitor setup.

Speed calibration must be done prior to first use, and re-calibration is recommended periodically, particularly if soil conditions change.

2. Rate: Disk Selection:

The Seed and Fertilizer Rate manual (401-651B) has a table of recommended disks. Disks are specific to crops. Some crops have multiple disks available, to cover both seed varieties, and different populations within disk rpm limits. Disks have a high and low rpm limit, which also corresponds to a high and low field speed limit. The charts account for these limits.

See “**Air-Pro® Meter Disk Installation**” on page 57.

If any rows are unused, install special blank disks. See “**Row Unit Shut-Off**” on page 58.

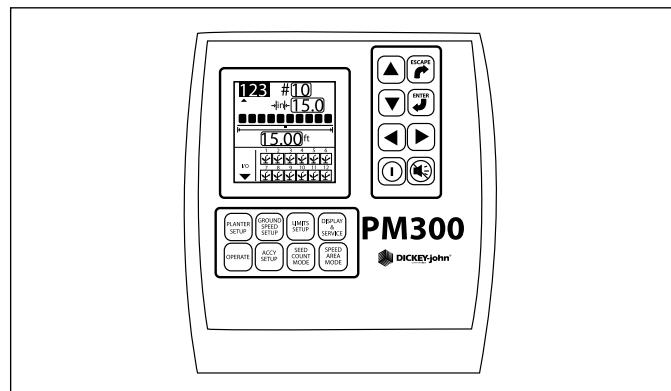


Figure 27
Monitor Setup Screen

29978

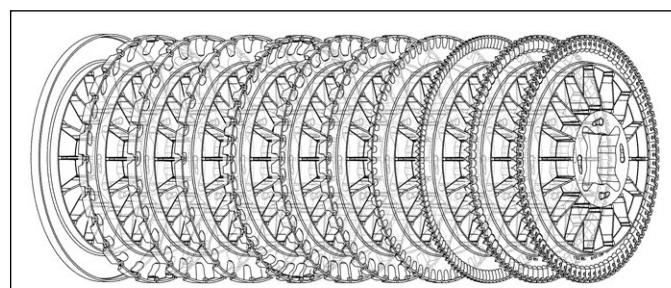


Figure 28
Air-Pro® Seed Disks

29594

3. Rate: Range Sprockets

Range sprockets provide coarse control of seed rate.

Refer to Figure 29 and Figure 30

All Seed Rate charts specify a DRIVING and DRIVEN sprocket combination for the Range. Crops with more than one range are noted as "LOW RANGE" or "HIGH RANGE" at the top of the chart.

To change Range:

- Loosen the bolt securing the idler plate ③.
Disengage the idler.
Remove the chain.
- Remove pins from shaft ends at DRIVING and DRIVEN sprockets, as well as at storage shaft ① at left end of frame.
- Exchange sprockets so that new DRIVING and DRIVEN sprocket tooth counts (stamped on sprocket face) match chart. Re-pin all shafts.
- Remount chain (see page 83). Re-engage idlers for $\frac{1}{4}$ inch (6.4 mm) slack in longest chain span.

4. Rate: Transmission Sprockets

Transmission sprockets provide fine control of seed rate. Each chart row provides a rate adjustment of 2 to 3%.

Refer to Figure 30

Each Seed Rate chart row has a unique pairing of DRIVING and DRIVEN Transmission sprocket.

To change Transmission:

- Loosen the bolt securing the idler plate ④.
Disengage the idler.
Remove the chain.
- Remove pins from shaft ends at DRIVING and DRIVEN sprockets, as well as at storage shaft ① at left end of frame.
- Exchange sprockets so that new DRIVING and DRIVEN sprocket tooth counts (stamped on sprocket face) match chart. Re-pin all shafts.
- Remount chain (see page 83). Re-engage idlers for $\frac{1}{4}$ inch (6.4 mm) slack in longest chain span.

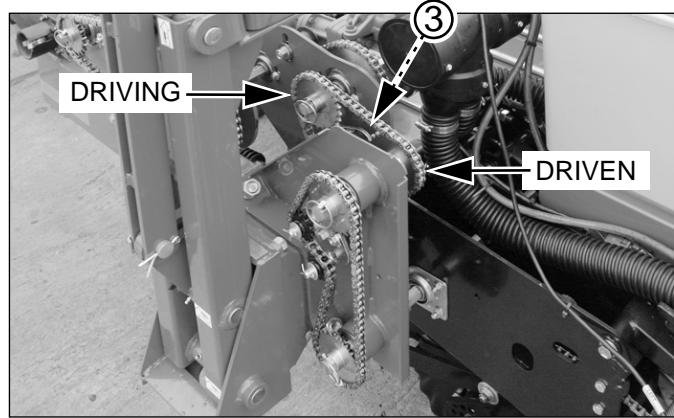


Figure 29
Range Sprockets

31030

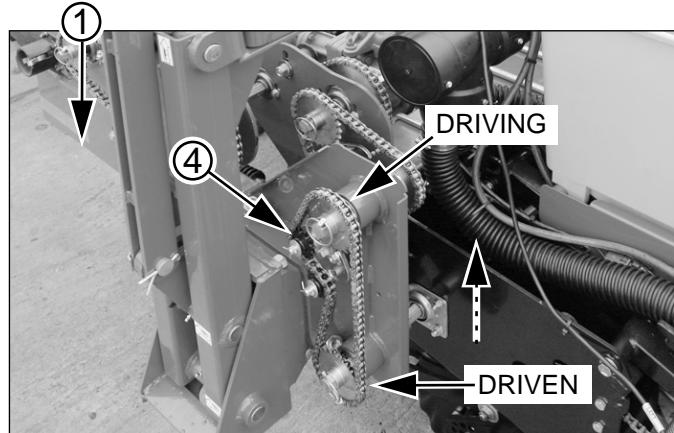


Figure 30
Transmission Sprockets

31030

5. Rate: Seed Inlet Shutter

A consistent seed results from having a consistent number of seeds (usually one) in each pocket of the seed disk, avoiding "skips" (fewer seeds per pocket) and "doubles" (excess seed per pocket).

Refer to Figure 31

One of the factors that affects seed pickup at the disk is having an optimal seed pool (page 56). The depth of the seed pool is controlled by the seed inlet shutter ⑤.

Each Seed Rate chart specifies a suggested initial shutter setting. See "**Seed Inlet Shutter Adjustment**" on page 55 for setting details, and further adjustment.

At unused rows, set the shutter to zero/closed to prevent loss of meter pressurization air. Install a blank disk. See "**Row Unit Shut-Off**" on page 58.

6. Rate: Meter Pressurization

Refer to Figure 32

(which depicts a typical reading for some densities of corn)

A major factor that affects seed pickup at the disk is optimal meter pressurization. Fan air holds the seed in the disk pockets until they pass the drop brush (page 32).

The Seed and Fertilizer Rate manual has a section with suggested initial meter pressures, which may be a single value, or a graph based on seed density.

Meter pressure is set by a combination of tractor circuit lever and fan butterfly valve (page 31). See "**Air System Operation**" on page 27.

7. Rate: Checking

Although the seed monitor reports a computed population based on seeds sensed, only an actual furrow check provides certainty about the actual seeding rate. See the Seed and Fertilizer Rate manual.



Figure 31
Seed Inlet Shutter: Setting III

29607

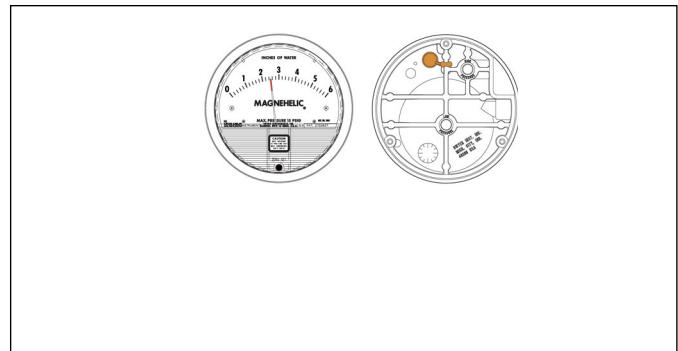


Figure 32
Meter Pressure Gauge

29842

Marker Adjustments (Option)

See also:

- “Initial Marker Setup (Option)” on page 114 for marker speed and marker extension
- “Marker Operation (Option) S/N-” on page 33; and,
- “Marker Maintenance (Option)” on page 82 for marker shear bolt and marker hydraulic bleeding

Marker Disk Adjustment



Sharp Object Hazard:

Use caution when making adjustments in this area.

Marker disks may be sharp.

Refer to Figure 33

- To change angle of cut, and the width of the mark, loosen $\frac{1}{2}$ inch bolts ② holding the disk assembly.

For a wider mark ⑩, increase the angle of the marker with respect to the tube ①. For a narrower mark ⑪, reduce the angle.

Note: Do not set a marker angle wider than needed to make a useful mark. Excess angle increases wear on all marker components.

- Tighten bolts ②.

Note: Direction of travel ③ tends to drive the disk angle to Wide. If bolts are not tight enough, or loosen over time, disk slips into the Wide mark configuration.

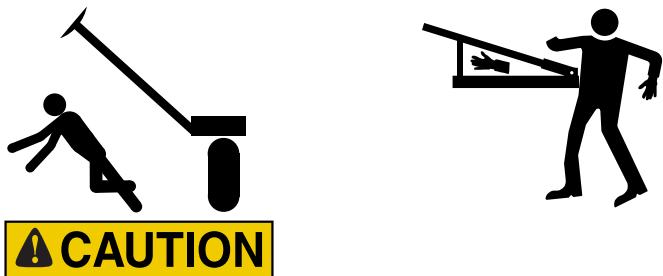
Refer to Figure 34

Applies to planters with serial numbers:

(YP3P425A s/n B1005M+)

(YP3P625A s/n B1007P+) (YP3P825A s/n B1008R+)

Current markers are equipped with an additional marker disk adjust mount ③ which gives the marker added capability of up/down direction of movement where previously it only performed side to side movement. Additionally, the markers are able to make a wider mark in the field.



CAUTION

Sharp Overhead Object and Pinch/Crush Hazards:

Never allow anyone near the planter when folding or unfolding the markers. Markers may fall quickly and unexpectedly if the hydraulics fail. Anyone beneath may be injured if hit by an unfolding marker, or caught in a folding marker.

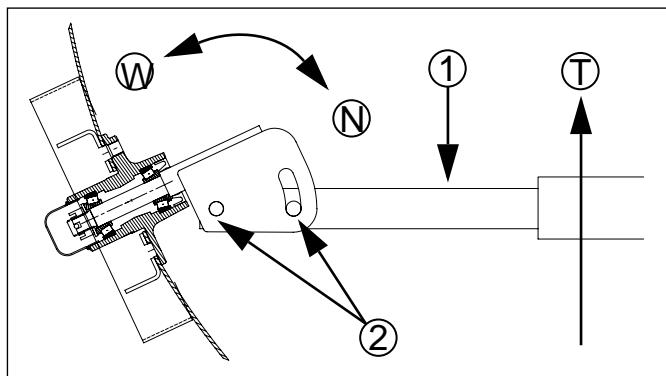


Figure 33
Marker Disk Angle

11757

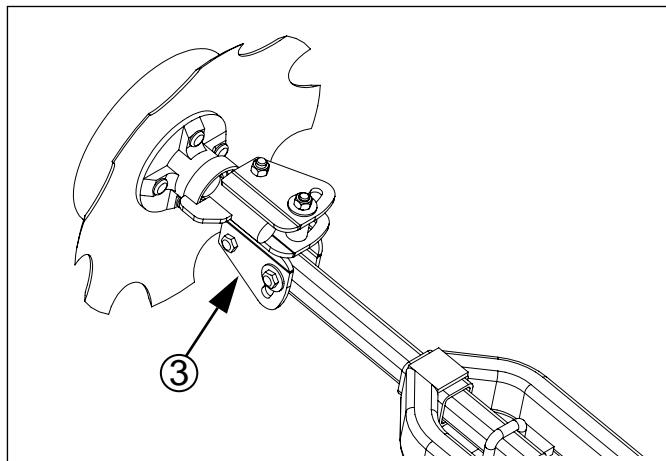


Figure 34
Marker Disk Angle (S/N+)

31974

Fan and Adjustment

1. These steps presume that correct seed disks are installed (per **Seed Rate Manual**), and the seed inlet shutters are set for the seed (page 55).
2. With fan off, check meter pressurization reported by the Magnehelic®^a gauge. Re-zero as needed.
3. Determine the recommended meter pressurization based on your own notes or the published value in the **Seed Rate Manual**.
4. Put tractor in Park and set brakes. Set tractor engine speed to typical field rpm. Lift planter.
5. Start the fan. Gradually increase fan speed using the tractor's hydraulic flow control for the circuit. Using hydraulic flow and/or the butterfly valve, adjust meter pressurization to the developed or suggested value from step 3.
6. Rotate ground drive wheel to fill meters. Meters are filled when seed begins emerging below two or more openers. With fan running, put the tractor in Park and set the brakes. Walk behind the wings, remove several rain covers, and check for seed in meters by looking through the clear disks.
7. Re-check meter pressurization. With meters and disks filled, air loss through empty disk pockets is reduced, and meter pressurization can change.
8. Begin planting. Troubleshoot any obvious problems or optional seed monitor alarms.
9. During the first pass, take note of the average populations reported on the optional seed monitor.

If the reported seed monitor population varies from your intentions by a significant amount, it is imperative to perform a furrow check.

For serious rate variances, for which the source of the problem and the solution are not quickly determined, see "**Population Troubleshooting Charts**" on page 67.

If the population is only slightly low, the problem can be skips (periodic empty disk pockets). If slightly high, the problem can be doubles (period pockets with double seed). An adjustment to the meter pressurization may correct either condition (see step 12).

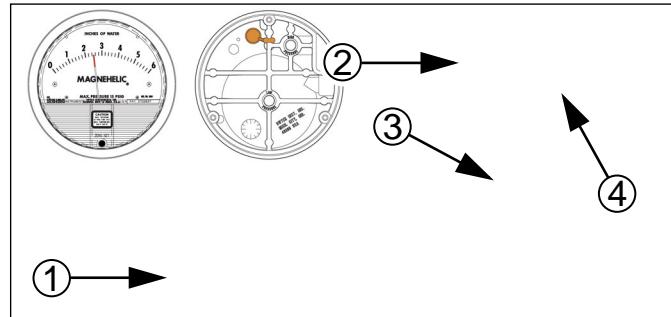


Figure 35 29842
Magnehelic® Gauge

Re-zero the Magnehelic® gauge on level ground with the fan off, and if possible, under no-wind conditions. Turn the set screw ① on the meter face until it reads zero from the tractor driver's viewing position.

Port ID for Troubleshooting:

- ② Over-pressure relief port (with plug in place)
- ③ Low-pressure port (breather/atmospheric pressure)
- ④ High-pressure port (from manifold chamber)

Small seeds, such as Milo, may be under-reported by the seed monitor. Use the "**Alternate Skip/Double Check**" below to verify seed status at the disc pockets.

Furrow Check:

Expose several seeds in each of several rows, being careful not to disturb their relative positions. Measure and average the distance between seeds. Compare this to the predicted seed spacing for the population in the **Seed Rate Manual**.

Any instances of no seed where expected may be a sign of "skips". Finding two seeds at the same spot is clear indication of "doubles".

a. Magnehelic® is a registered trademark of Dwyer Instruments, Inc.

10. Resume planting.

A small varying population deviation between rows is normal. If a row is consistently running lower or higher than the other rows, it could indicate a meter or seed sensor problem that needs attention.

"Population Troubleshooting Charts" on page 67.

11. Continue to monitor meter pressurization.

When oil reaches operating temperature, fan speed can change. Expect to make periodic adjustments to fan circuit or butterfly valve to maintain ideal meter pressurization.

12. Skips:

If all else is correct, and the overall average population is running low (or there are gaps upon furrow check), the cause may be seeds falling out of disk pockets before delivery to the seed tube. Increase meter pressurization to correct this.

13. Doubles:

If all else is correct, and the overall average population is running high (or there are double seeds upon furrow check), the cause may be two seeds in some disk pockets at delivery to the seed tube. Decrease meter pressurization to correct this.

Insufficient meter pressurization, or unusually rough fields, can increase the incidence of empty pockets. Be sure to rule out other causes (such as skipping chains, meter starvation, incorrect meter disks) before adjusting meter pressurization to reduce apparent skips.

Excess meter pressurization can increase the incidence of doubles. Be sure to rule out other causes (such as incorrect meter disks) before adjusting meter pressurization to reduce doubles.

Fine-Tuning Meter Pressurization

After several passes, and you are comfortable with the planter's operation, you can optimize meter pressurization. Use this method during longer passes, so there are fewer distractions (and see sidebar regarding Milo).

14. Observe the current overall average population reported by the monitor.
15. Adjust the fan speed down, in small steps, waiting 5-10 seconds between adjustments, until skips occur (actual population begins falling below target). Note the pressure at which skips begin.
16. Restore pressure to the initial value at step 14.
17. Adjust the fan speed up, by periodic small increments, until doubles occur (actual population begins rising above target). Note the pressure at which doubles begin.
18. Adjust meter pressurization to a value halfway between the limits established at step 15 and step 17. This is the ideal value for your crop, disk and population, providing equal margin against skips and doubles. Record this value for future use.

Alternate Skip/Double Check

Small seeds, particularly Milo, are less reliably sensed as skips or doubles by the seed tube sensors, and watching monitor population is unlikely to locate the pressure limits. This test can also be quicker for all seeds.

- A. After planting a few passes with initial settings, remove the rain covers from several rows (use rows with a variety of seed hose lengths and routes).
- B. Make a meter pressurization adjustment. Resume planting for a pass or less.
- C. Stop planter motion but leave engine at field rpm and fan running.
- D. Inspect the seed disks closely. Look for empty seed cells (skips) and cells with multiple seeds (doubles).
- E. Repeat step B-to-step D until limits are established. Record limits. Re-install rain covers. Plant with median settings.

Gauge Wheel Adjustments

The minimum tool bar height is limited by the gauge wheels. In some conditions, such as ridge planting, you may need to use a tool bar height lower than 26 inch.

Refer to Figure 36

There are two adjustments for this at the gauge wheels.

- Gauge wheel yoke spring length ①:
This provides a variable height reduction of up to 2.2 inch (5.6 cm).
- Axle hole change ②:
This provides a 2 inch (5.1 cm) height reduction.

Making both adjustments provides up to 4.2 inch (10.7 cm) of tool bar height reduction.

Yoke Spring Adjustment

Refer to Figure 36

Check the length ③ of all springs before adjusting.

The maximum (and factory set) spring length is:

③ 3.0 inch (7.6 cm)

The minimum spring length is:

③ $2\frac{3}{8}$ inch (6.0 cm)

Each $\frac{1}{8}$ inch of spring compression raises the wheel by approximately 0.44 inch (3.5 mm per mm).

To adjust the spring length:

1. Raise the planter until the gauge wheels are slightly off the ground. Place blocks or jack stands under the frame for safety.

Note: If there is weight on the wheels, the springs may have additional compression and may not be at a length you can usefully measure.

2. Loosen the jam nut ④.
3. Rotate the adjuster nut ⑤ to set the new spring length.
4. Tighten the jam nut.

Wheel Axle Adjustment

If the target tool bar height cannot be achieved with the spring adjustment, relocate the wheel axles in the arms. This lowers the planter by about 2 inch (5.1 cm).

1. Raise the planter until the gauge wheels are slightly off the ground. Place blocks or jack stands under the frame for safety.
2. Remove bolts ②, located in lower holes, securing transport ground tire assembly to unit.
3. Move wheel assembly and secure assembly to upper hole using previously removed bolt.

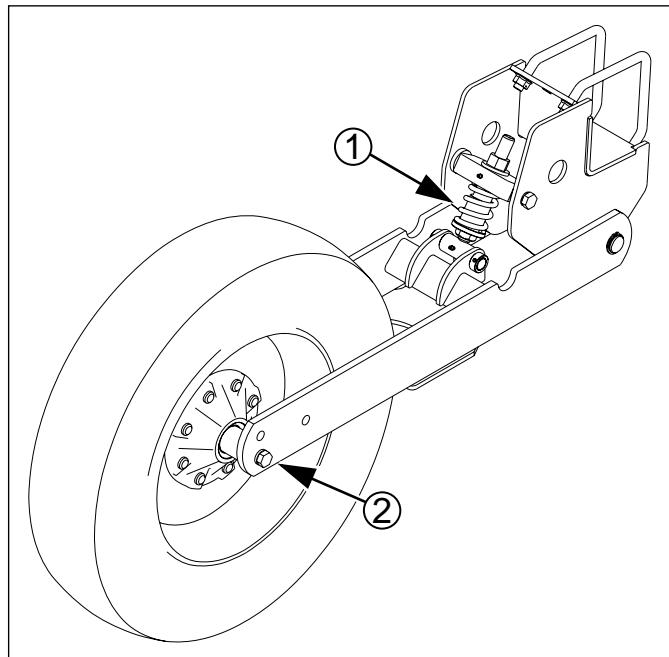


Figure 36
Gauge Wheel Height

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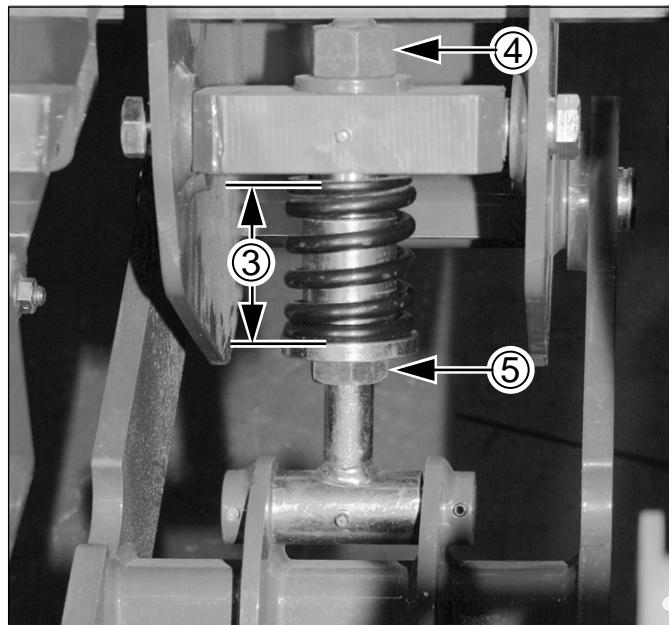


Figure 37
Gauge Wheel Spring Length

31053

25AP Series Row Unit Adjustments

Refer to Figure 38 (which depicts a row unit populated with most optional accessories supported for use with the YP425A3P/625A3P/825A3P Air Planter)

From front to back, a Great Plains 25 Series Air-Pro® row unit can include the following capabilities (some optional):

1. **Lock-Up Pin Storage Hole** (Hole Standard)
See “Row Unit Shut-Off” on page 58.
2. **Down-Pressure Cam** (Standard)
Row units are mounted on parallel arms. This parallel-action mounting allows the row-unit to move up and down while staying horizontal. Springs add an adjustable force, set by the cam, to the row weight. See “Row Unit Down Pressure” on page 47.
3. **Meter Pressurization Air Inlet** (Standard)
Pressure-regulated air enters the meter here and holds seed in the disk pockets. See “Fan and Adjustment” on page 43.
4. **Seed Delivery Hose Inlet** (Standard)
When the hopper slide gate (not shown) is open, gravity carries the seed into the meter at the shutter ⑥. The hose is easily removed for inspection. There are no adjustments.
5. **Air-Pro® Seed Meter** (Standard, Choice of Disks)
See “Air-Pro® Meter Disk Installation” on page 57.
6. **Seed Inlet Shutter** (Standard)
This controls the level of bulk seed at the disk. There are four operating settings, plus fully open (clean-out) and fully closed (shut-off or storage). See “Seed Inlet Shutter Adjustment” on page 55.
7. **Side Gauge Wheel Depth** (Standard)
The T-handle sets planting depth by controlling the height of the side gauge wheels relative to the opener discs. See “Side Gauge Wheel Adjustment” on page 53.
8. **Press Wheel Force, Angle, Stagger** (Standard)
The press wheels close the furrow, gently pressing the soil over the seed to ensure good seed to soil contact for even emergence. See “Press Wheel Adjustment” on page 62.
9. **Row Unit Lock-Up Hole** (Hole Standard)
Pins are standard on some models. With the row unit raised above level, the lock-up pin is inserted here. See “Row Unit Shut-Off” on page 58.
10. **Row Cleaner** (Option)
Row cleaners clear trash from the row, to a depth set by an adjustment on the arms. See “Unit-Mount Cleaner Adjustments” on page 49.

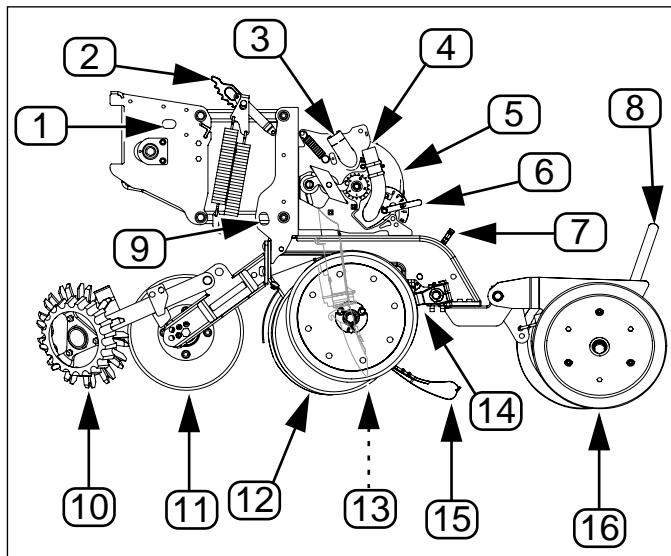


Figure 38
25AP Series Row Unit

29983

11. **Unit-Mount Coulter** (Option)
Coulters cut remaining trash and begin opening the seed furrow. Working depth is set by row depth and a mounting hole selection. See “UMC Coulter Adjustments” on page 50.
12. **Opener Discs** (Standard)
Row-unit double disc openers create the seedbed furrow. They have adjustments for angle and spacing. See “Row-Unit Opener Disk Adjustments” on page 52.
13. **Seed Tube with Sensor** (Standard)
Requires no adjustment.
14. **Scrapers** (Optional, not shown)
Inside scrapers require no adjustment. For gauge wheel scrapers, see “Adjusting Gauge Wheel Scrapers” on page 54.
15. **Seed Firmers** (Seed Flap Standard, not shown)
An optional seed firmer (Keeton shown) minimizes seed bounce and improves soil contact. It may also deliver fertilizer. See “Seed Firmer Adjustments” on page 61.
16. **Press Wheel Type** (Choice)
A variety of single and dual press wheel assemblies are available, some region-specific. Consult your Great Plains dealer.

NOTICE

Equipment Damage Risk:

Do not back up with row units in the ground. To do so will cause row unit plugging and may result in severe damage.

Row Unit Down Pressure

Refer to Figure 39

The ideal amount of down-force causes the side gauge wheels to compress any loose surface soil, but not press a trench into subsoil.

To assess down-force, operate the planter for a short distance on typical ground (with or without seeding), and stop. Leave the planter lowered (row units in ground).

At several row units, inspect the furrow created by the opener discs, but prior to furrow closing by the press wheels.

Note: Be sure to inspect rows both in and out of tire tracks.

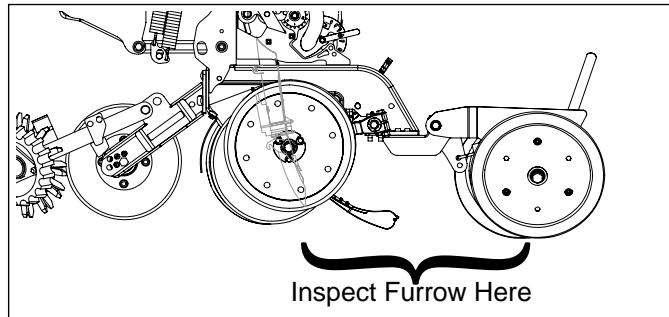


Figure 39
Checking Furrow

29983

Refer to Figure 40

1. If the side gauge wheels are leaving no tracks, or light tracks, increase down-force.
2. If the wheels are compressing trash and loose soil, and leaving clear tracks right at the top of the subsoil, down-force is probably correct and needs no adjustment.
3. If the wheels are creating a trench into the subsoil, down-force is too high and needs to be reduced.

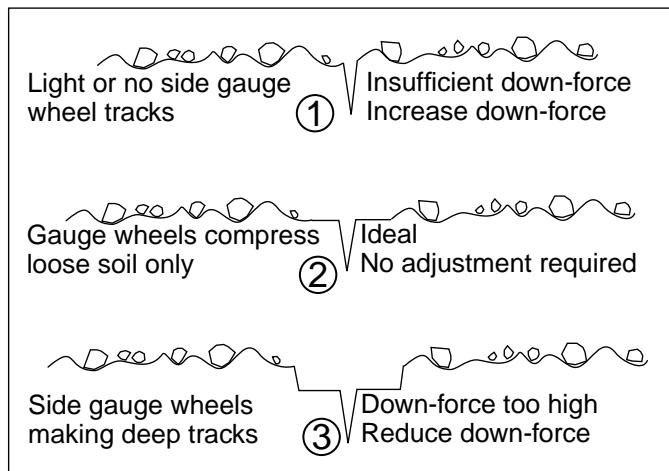


Figure 40
Assessing Down-force

Adjusting Down-Force

Refer to Figure 41

Row unit springs ① provide the primary down pressure necessary for row unit disks to open a seed trench. The weight of the row units themselves contributes about 130 pounds (59 kg) of the total force.

The springs allow the row units to float down into depressions and up over obstructions. Springs also provide down force on coulters when using optional row mounted coulters, and provide the primary down force on row cleaners (optional), seed firmers (optional) and press wheels.

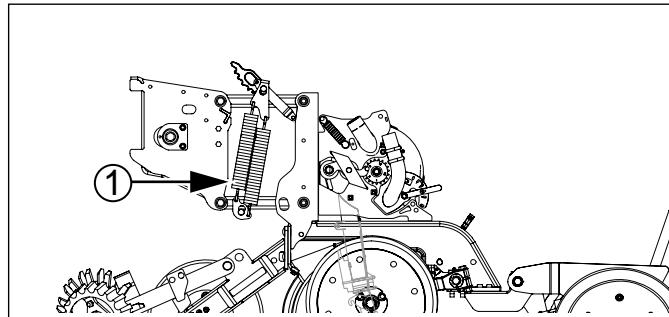


Figure 41
25AP Series Row Unit Springs

29983

An adjuster cam ② sets down pressure individually for each row unit. This is useful for penetrating hard soil and planting in tire tracks. For best results always adjust tractor tires so they are not ahead of 30 inch rows.

Refer to Figure 43

Cam Notch	Pounds	Kilograms
zero (out of notch)	Lock-Up & Maintenance	
one	305	140
two	330	150
three	365	165
four	425	195
five	485	220
six	545	250
tip	Do Not Use	

Values are down force with hoppers empty

29958

Use only enough down pressure to cut the seed trench and maintain proper soil-firming over seed. With a full seed load, the force on each row is up to 120 pounds higher at start of planting.

Excessive row unit spring force will lead to premature wear on row unit components and uneven seed depth. If all rows are set to cam 4, some lighter planter configurations could be lifted out of ground contact.

Refer to Figure 42 (shown at cam setting 2),

Figure 43 and Figure 44

To adjust down pressure, use a $1\frac{1}{8}$ inch (29 mm) open end wrench or the tool ③ stored at the left end of the planter.

1. Raise the planter. Although this adjustment can be made with the planter lowered, the springs will be in tension, and will require more effort. The extra force required may also damage tools.
2. Install lift cylinder locks.
3. Put tractor in Park and shut it off.
4. Position wrench on the fixed nut ④ near or slightly forward of vertical.
5. Pull upper spring link ⑤ back.
6. Move the adjustment cam ② to the new setting on the spring adjust bar ⑥.

Note: Do not set all rows higher than notch four. Using high settings across all rows causes uneven planting. Individual rows may be set higher if running in tire tracks. On twin-row configurations, setting all rows to notch 4 or higher results in a net up force that can exceed the weight of the planter when the hoppers are nearing empty.

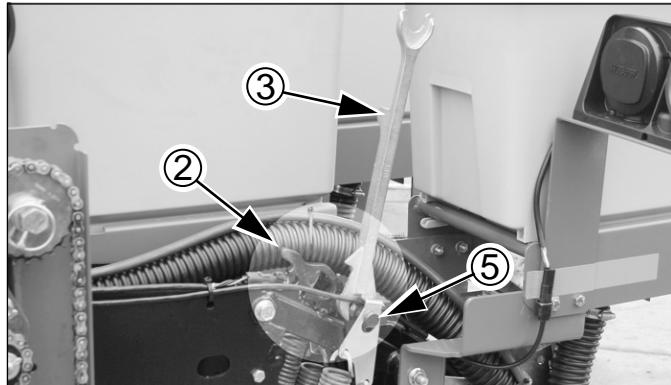


Figure 42
25AP Series Row Unit
Spring Adjustment

31034

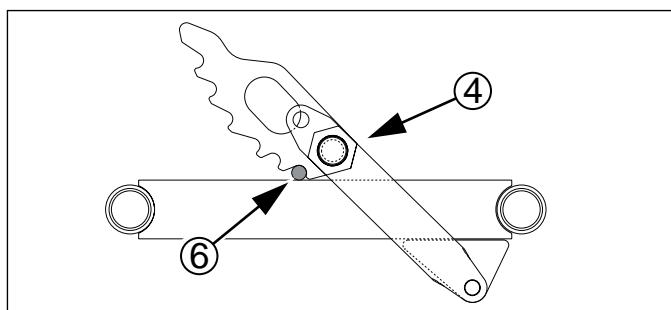


Figure 43
Row Unit Minimum Cam (at 1)

27065
bottom

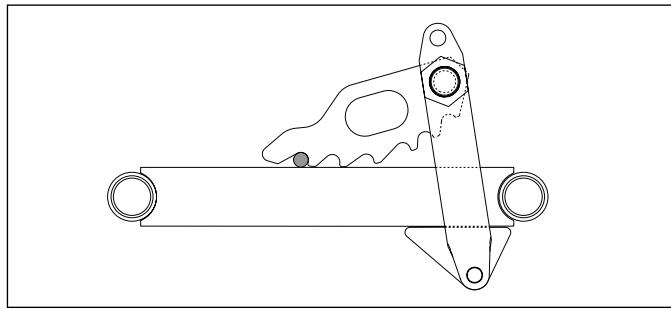


Figure 44
Row Unit Maximum Cam (at 6)

27065
top

Unit-Mount Cleaner Adjustments

Refer to Figure 45 and Figure 46

Optional Martin row cleaners are unit-mounted, using: UMRC: Unit-Mount Row Cleaner (stand-alone), or UMC-RC: Unit-Mount Coulter RC (on coulter bracket, with or without a coulter disk present).

There are two adjustments:

1. Wheel placement (forward or aft mounting hole, for more or less aggressive cleaning), and
2. Wheel height, adjusted by a stop. Cleaner arms float. The stop only sets the lowest position.

In UMRC mount, a pinned cross-tube ③ on the mount adjusts the depth. In UMC-RC (coulter) mount, a sliding down-stop block ⑥ adjusts how close to the ground the row cleaners operate.

The row cleaner needs to be adjusted for your conditions, crop changes, and as coulters and openers wear. Ideally, cleaners contact only the trash, and do not disturb the soil. If allowed to "dig", row cleaners can reduce seed coverage.

Suggested initial depth is tine tips at ground level.

Make the adjustment with the planter raised. Install lift-assist cylinder locks. Also check bolt ⑤ tightness prior to each planting session, to avoid down-stop slippage.

To adjust the row cleaner:

1. Determine the height adjustment required. Measure from the lowest tine to the ground. Determine the desired new measurement.
2. Support most or all of the weight of the arm to prevent injury and ease the adjustment. Loosen bolts ⑤ on UMC-RC. Remove bent pin ② on UMRC.
3. Support arm at desired height.
4. UMRC: Slide adjustment tube ① until cross-tube ③ contacts arm at target height. Insert bent pin ② in whichever hole pair is most in alignment.
5. UMC-RC: Slide the down-stop ⑥ on the arm ④:
 - back toward the pivot for shallower cleaning, or
 - forward toward the tines for deeper cleaning.
 Tighten the bolts ⑤. Each possible hole pairing adjusts the tine height by about $\frac{3}{4}$ inch (19 mm).
6. Check the new height measurement.

Refer to Row Cleaner manual 204-085M-A for further information on use, adjustment and maintenance of row cleaners.

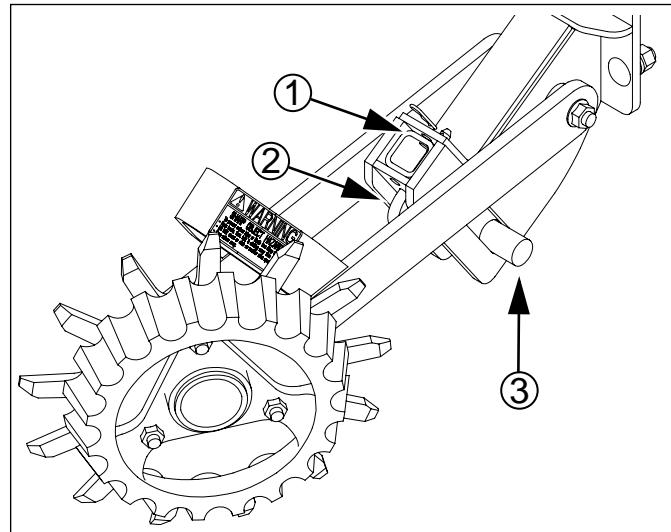


Figure 45
UMRC: Cleaner Adjust

27308

CAUTION

Sharp Object Hazard:

Wear hand protection when working in this area. Row cleaner tines, casting edges and coulter blades are sharp.

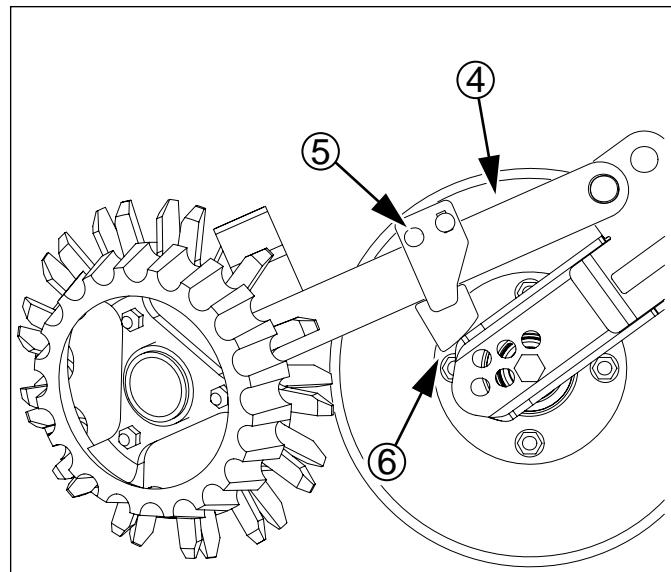


Figure 46
UMC-RC: Row Cleaner Adjust

27343

UMC Coulters Adjustments

Note: Coulters are not factory-installed. Check alignment and depth prior to first use.

UMC Coulters Depth Adjustment

The ideal operating depth for coulters is $\frac{1}{4}$ inch (6 mm) above opener depth. Although they may have originally been set to this depth, coulter (and opener) blades wear with time, and may need adjusting.

Adjusting the coulter depth is accomplished by re-mounting the coulter blade in one of the six mounting holes arranged in a staggered pattern in the coulter bracket.

Refer to Figure 47 and Figure 48

Raise planter and install cylinder locks before working on coulters. Row unit may be fully lowered or locked up. Do not attempt to move blade when the current or new position causes it to contact the ground during the adjustment. Be careful around the front end of row units. Row cleaner tines and coulter blades may be sharp.

To adjust coulter depth:

1. Determine the present opener and coulter depths.
2. Note which bracket hole the coulter is presently using.
3. Determine which new hole will position the coulter closer to the $\frac{1}{4}$ inch-above depth. See the table below.
4. Remove the $\frac{5}{8}$ -11 x 4 inch bolt, lock washer and nut (7 in Figure 47).
5. Move the blade to the new position. Insert the bolt, and tighten on the lock washer and nut.

Hole Number	Depth of (new) coulter blade relative to (new) opener blades
②	1 inch (25 mm) above
③	$\frac{5}{8}$ inch (16 mm) above
⑤	$\frac{1}{4}$ inch (6 mm) above
①	0
④	$\frac{3}{8}$ inch (9.5 mm) below
⑥	$\frac{3}{4}$ inch (19 mm) below

6. Re-adjust row cleaners, if installed.

If a worn coulter cannot be adjusted to satisfactory operating depth, replace coulter.

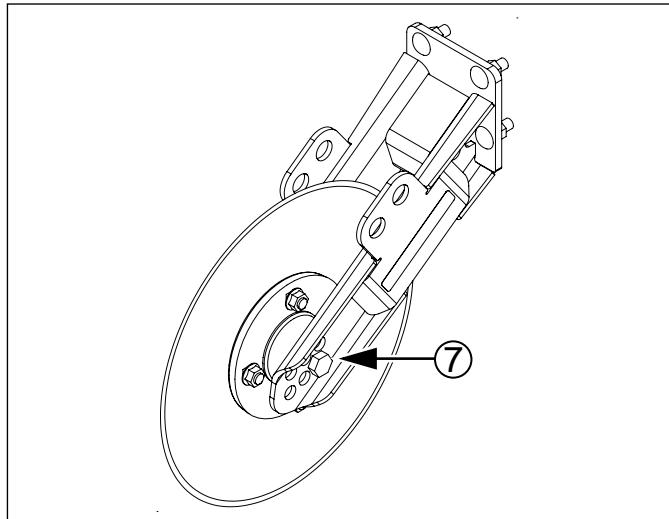


Figure 47
25 Series Unit-Mounted Coulter

29124

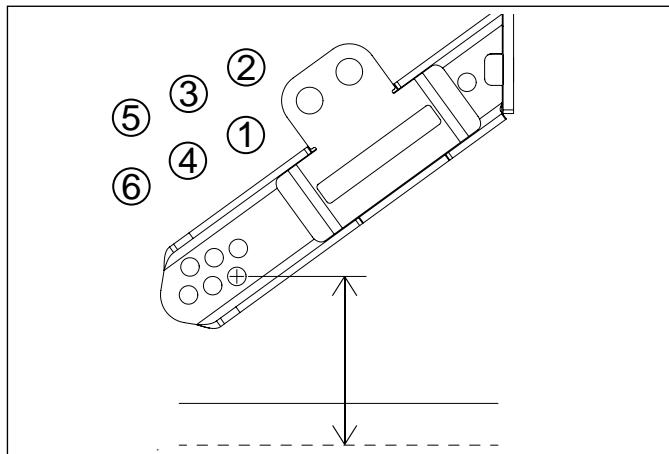


Figure 48
Coulter Blade Mounting Holes

29125

Coulter Row Alignment

Refer to Figure 49

For unit-mounted coulters, the ideal alignment is for the blade to open a furrow directly ahead of the opener discs.

As a check on coarse alignment, sight along the coulter blade center-line ①, the gap between the opener blades ②, and the center-line between the press wheels ③. If they are clearly out of alignment, either the coulter or the press wheels (or both) may be in need of adjustment.

The exacting test of correct alignment is field results. Operate the planter on some test ground (no seed required), and verify that the opener blades are in the groove opened by the coulter, and that the press wheels are centered over the furrow. See “**Press Wheel Adjustment**” on page 62 for press wheel alignment.

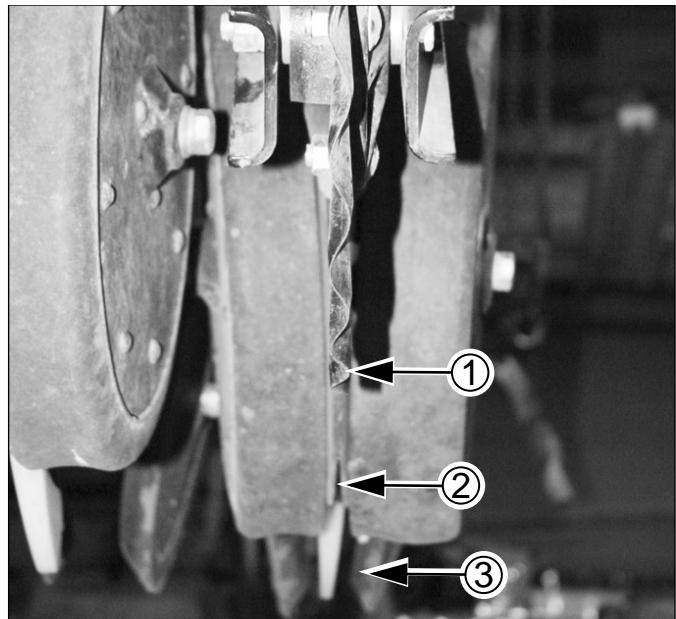


Figure 49
25 Series Coulter Alignment

26125

Refer to Figure 50

To adjust coulter alignment, loosen the four bolts ④ that attach its bracket to the row unit. The holes on the row unit are slotted, side-to-side, and allow the coulter bracket sideways and rotational adjustment.

Keep the coulter blade vertical while adjusting.

If the blade cannot be brought into alignment, check that the blade spindle itself is using the same hole location on each side of the bracket.

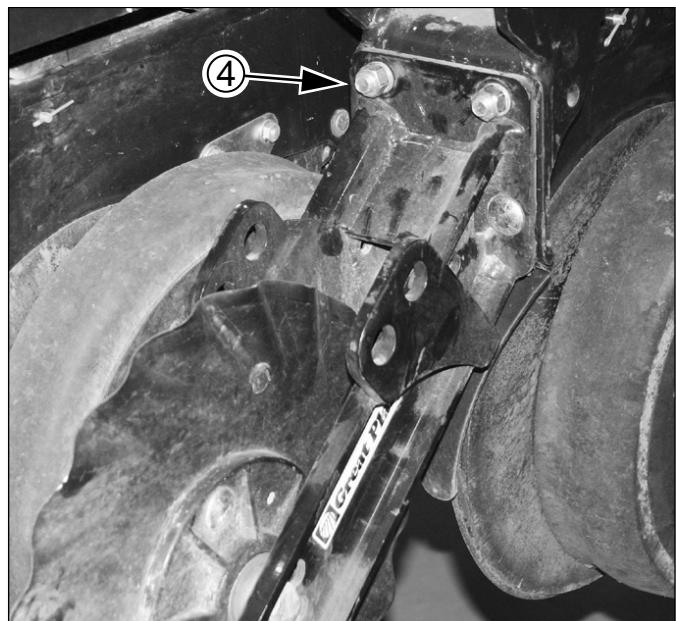


Figure 50
25 Series Coulter Mount

26126

Row-Unit Opener Disk Adjustments

25 Series openers have three adjustments:

1. planting/seed depth
2. opener disc to disc clearance
3. gauge wheel/opener disk clearance (page 53)

Setting Planting Depth

Refer to Figure 51

The "T" handle ① sets planting depth by limiting the how high the side depth gauge wheels ride relative to the opener disks. The position of the seed tube itself is fixed relative to the disks, and is not adjusted.

To adjust seed depth, pull the "T" handle ① up and back, move it forward or aft, and set it back in a different pair of holes in the scale.

- For shallower planting, move the "T" handle ① forward.
- For deeper planting, move the "T" handle ① back.

Opener Disc Contact Region

Refer to Figure 52 and Figure 53

Opener disc angle and stagger is not adjustable, but disc-to-disc spacing is, and may need attention as discs experience normal wear. Spacers will need to be reset when blades are replaced.

The ideal spacing causes the blades to be in contact for about one inch ④. If you insert two pieces of paper between the blades, they should slide to within zero (touching) to 1.5 inch (3.8 cm) of each other. If zero, the gap between the blades should not be significantly greater than the thickness of two sheets of paper.

If the contact region is significantly larger or there is a large gap, it needs to be adjusted by moving one or more spacer washers.

Adjusting Disc Contact

1. Raise the planter and install lift cylinder locks.
2. Remove the side gauge wheels ⑤ on the row unit in need of adjustment.
3. Remove the bolt ⑥ retaining the opener disc ⑦ on one side. Carefully remove the disc. Do not lose the hub components and spacer washers ⑧, ⑨.
4. To reduce the spacing between the discs (the normal case), move one spacer washer from the inside ⑧ to the outside ⑨ of the disc.
5. Re-assemble and check disk contact.

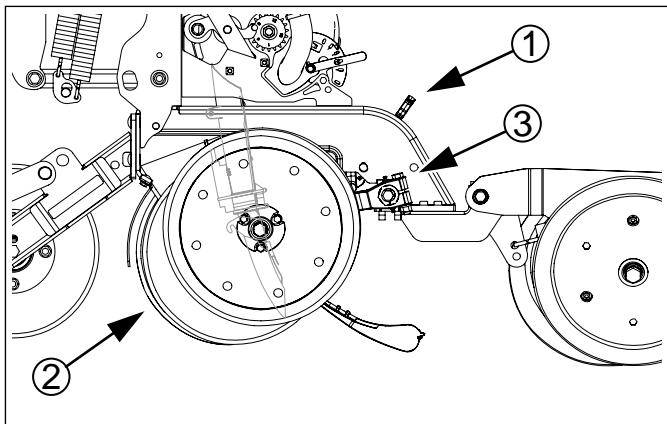


Figure 51
Opener Adjustments

29983

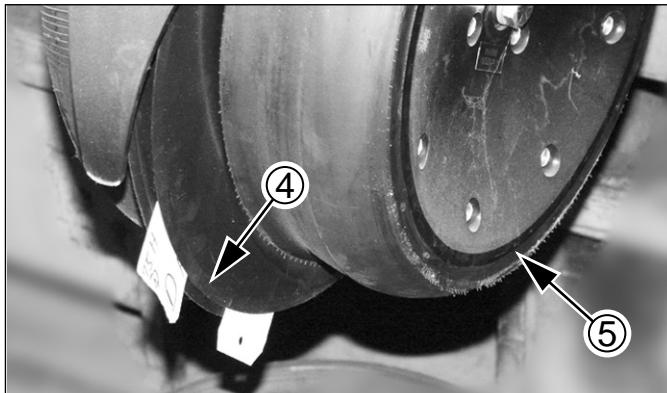


Figure 52
Opener Disc Contact Region

26127

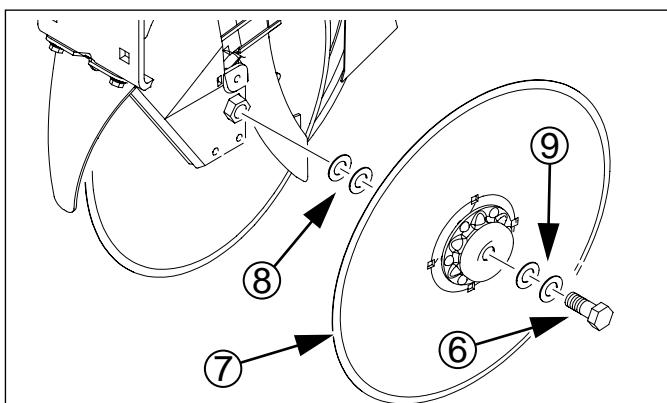


Figure 53
Opener Disc Spacers

26128

Side Gauge Wheel Adjustment

Refer to Figure 54 and Figure 55

Disc-to-wheel angle and clearance ideally has the wheel just touching the disk when the wheel is raised to planting depth (is up against the stop set by the "T" handle). The goal is to have both disks and wheels turn freely, but keep soil and trash from getting between them.

These two adjustments interact with each other. Changing one requires at least checking the other.

In addition to changing the disk angle due to changing depth or new field conditions, these two settings may need attention over time as the disk and wheels wear from normal use. This adjustment will also need to be made if any opener components are replaced.

For 2 inch (5.1 cm) planting depth, adjust side gauge wheel angle so wheels contact row unit disks at the bottom of wheel. Check with row units in soil so wheels are held up.

At the same time, keep side gauge wheels close to opener disks so openers do not plug with soil or trash.

Note: Wheels should be out far enough so disks and wheels turn freely.

Refer to Figure 57 on page 54

To adjust side gauge wheels:

1. Raise the planter and install lift cylinder locks.
2. Loosen hex-head bolt ①. Move wheel and arm out on O-ring bushing.
3. Loosen pivot bolt ② Turn hex adjuster ③ so indicator notch ④ is at 5 o'clock to 7 o'clock.

Note: Use this as the starting point for adjustment.

4. Move wheel arm in so side gauge wheel contacts row unit disk. Tighten hex-head bolt ① to clamp arm around bushing and shank.

Refer to Figure 56

5. Check wheel-to-disk contact at 2 inch (5.2 cm) planting depth. Lift wheel 2 inch, check contact and release. When let go, wheel should fall freely.
- If wheel does not contact disk at bottom to area where blade leaves contact with soil, move hex adjuster until wheel is angled for proper contact with disk.

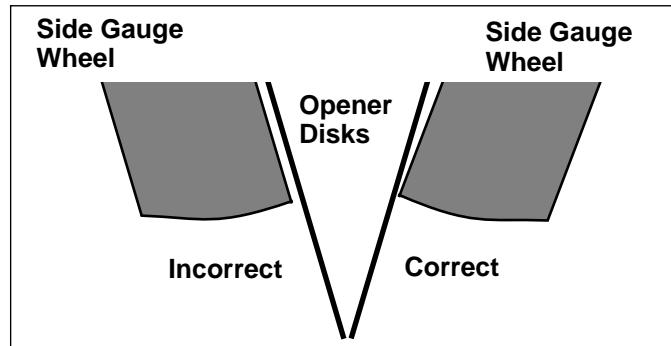


Figure 54
Disk/Gauge Wheel Alignment

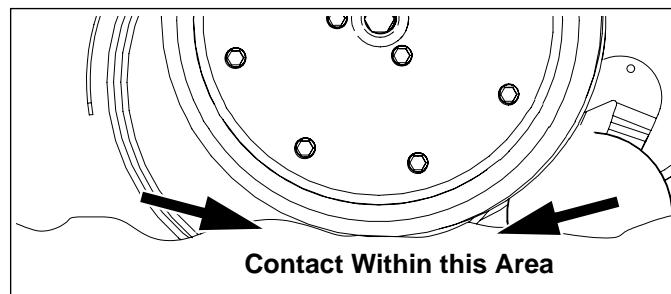


Figure 55
Opener-Gauge Wheel Contact

22531

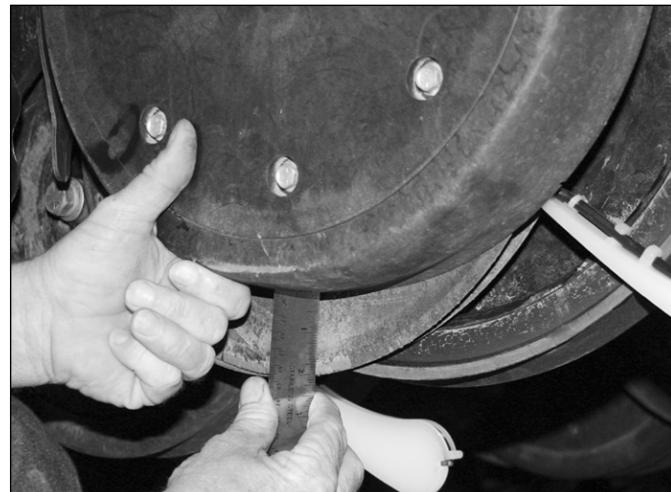


Figure 56
Checking Wheel/Disc Contact

26129

- If wheel does not fall freely, loosen hex-head bolt ① and slide wheel arm out just until wheel and arm move freely. Retighten hex-head bolt ① according to grade:
 $\frac{1}{2}$ inch Grade 5 bolt on 25 series:
 75 foot-pounds (102 N-m).
 $\frac{1}{2}$ inch Grade 8 bolt on 25 series:
 110 foot-pounds (149 N-m).

Note: Use "Torque Values Chart" on page 103 for reference.

- Keep turning hex adjuster and moving wheel arm until the wheel is adjusted properly. When satisfied, tighten pivot bolt ② to 110 foot-pounds (149 N-m).

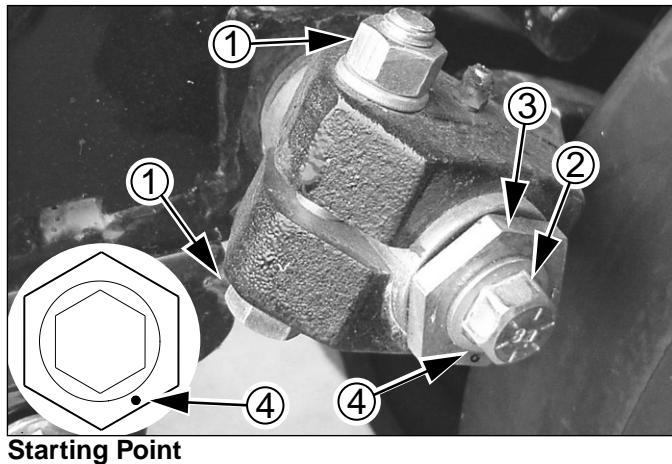


Figure 57
Disk/Gauge Wheel Adjustment

22524
22525

Adjusting Gauge Wheel Scrapers

Refer to Figure 58

Scrapers are optional, and may be useful in moist or sticky soils that tend to accumulate on gauge wheels and reduce intended planting depth.

To adjust scrapers:

- Loosen nut ⑤.
- Slide scraper ⑥ toward gauge wheel ⑧ until scraper touches tire.
- Slide scraper ⑥ away from wheel ⑧ leaving a $\frac{1}{8}$ inch (3 mm) gap at ⑦.
- Rotate scraper left and right around bolt, making sure it cannot touch tire if bumped in field. If it can touch tire, back scraper away from wheel until it cannot.
- Center scraper angle on bolt ⑤ until gap ⑦ is constant.
- Tighten nut ⑤.

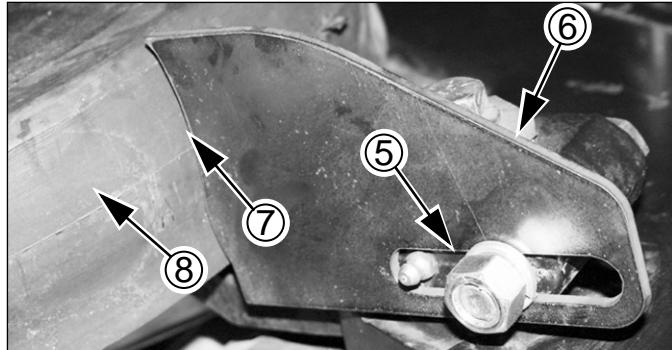


Figure 58
Gauge Wheel Scraper

225273

Seed Meter Setup and Adjustment

There are adjustments for seed inlet, and choice of disks. There are no other adjustments, in particular no brush adjustments, at the meter.

Meter Rain Cover

The rain cover keeps side winds from unseating seed in disk pockets. It also keeps precipitation, sunlight and field debris out of the meters.

Refer to Figure 59

To remove the rain cover, peel the flexible snap latches, at top ① and rear ②, away from the meter housing. Pivot the cover forward and down at tab ③ in slot.

When removing a cover, inspect it for damage and missing parts. If a cover does not have both latches, and an intact edge seal under the latches, the cover is apt to be lost during transport or field operations.

To replace a latch, temporarily remove the seal near the latch. Slide the replacement latch onto the cover lugs from the meter side, then snap the other end down over the lugs. Re-install the seal.

Seed Inlet Shutter Adjustment

Refer to Figure 60 (showing the shutter at setting 3)

The seed inlet shutter regulates the volume of bulk seed presented to the seed disk. The operating settings vary with crop, seed size and treatments. The shutter also has settings for row shut-off (completely closed), and clean-out (wide open).

The Seed Rate Charts include suggested initial shutter settings. Refine these settings based on experience, and on inspection of the slope of the seed pool at the bottom of the seed disk.

The shutter is operated by a handle. Lift the handle away from the meter plate. Move the handle to half a setting higher than the new setting, then back to the new setting, and lower the pawl into that slot.

The table at right is a general summary of shutter settings.

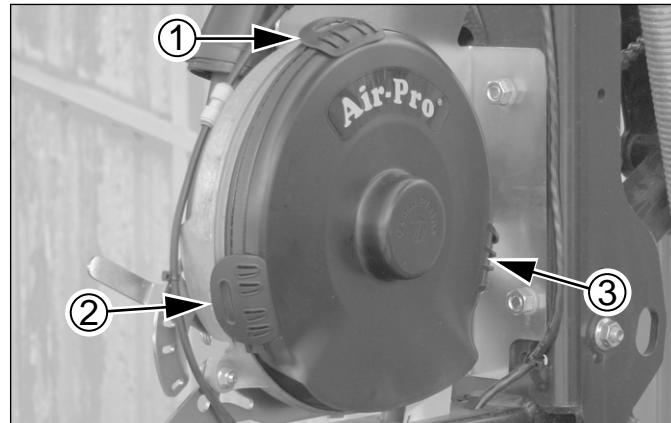


Figure 59
Rain Cover Removal

29606

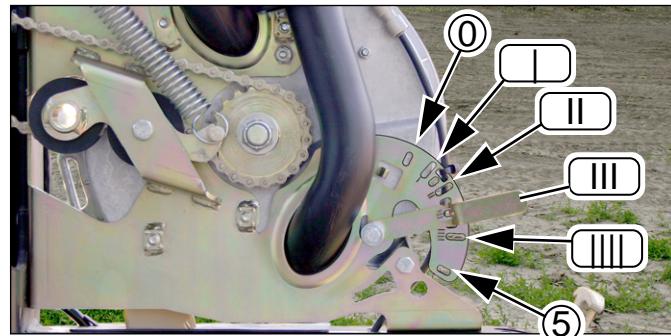


Figure 60
Seed Inlet Shutter

29607

Setting	Setting Typically Used For
Top (0)	Closed: Row Shut-Off, Meter Re-Fill
(1)	Small seeds, such as Milo, with little or no treatments
(2)	Small treated seeds and edible beans (such as Soybeans)
(3)	Corn, round popcorn
(4)	Large corn, or heavily treated corn
Bottom (5)	Wide Open: Clean-Out

Optimal Seed Pool Slopes

The optimal seed slope is one that results in the most consistent seeding, with minimal skips and doubles. The column at right has photographs of pool slopes found to be optimal for representative seeds.

If the suggested initial shutter settings do not seem to be working for your seed, adjust the shutter to achieve specific reserve slope targets.

Refer to Figure 61

For medium size and smaller seeds that flow easily, the slope runs from just above the 8:00 (o'clock) position on the housing wall, forward and down to one or two seeds deep at the base of the rear strip brush ①.

Refer to Figure 62 and Figure 63

For medium size and larger, or heavily treated smaller seeds that flow less easily, the slope runs from at or slightly above the 8:30 (o'clock) position on the housing wall, forward and down to 3-to-6 seeds deep at the base of the rear strip brush ①.

In general, the seeds at the base of the strip brush need to be deep enough that no air escapes there, and so that just enough seeds are present to begin populating cells.

Keep the top left/rear end of the pool below the 9:00 o'clock position (meter horizontal center-line).

Meter Re-Fill

Once planting is underway with the seed pools set, it is infrequently possible for bridging at or above the inlet to starve the meter of seed.

An empty meter causes seed monitor "Row Failure" alarm, with a report of the row number. Row numbers are counted from the left wing (outside row is row 1).

Stop, and put the tractor in Park. Leave the fan running. Locate the failed row, remove the rain cover, and verify that the meter is empty. Note the shutter setting.

Temporarily open the shutter one or two notches wider. If the problem was inlet bridging, seed should flow into the meter immediately.

If inlet bridging is not the problem, little or no seed flows into the meter with the shutter open wider. In this case, the problem is further up in the seed flow, and may be bridging where the seed hose joins the meter inlet (also check the slide gate). Close the shutter completely for about 15 seconds. This prevents meter pressurization air from opposing seed delivery. Gently tap on the seed inlet. Re-open the shutter and see if seed now fills the meter.

If no obvious foreign object was the cause of the bridging, the shutter setting may have been too small for the seed. Verify that this and other operating rows were at the correct initial shutter setting. If so, re-set the shutters to the next higher opening.

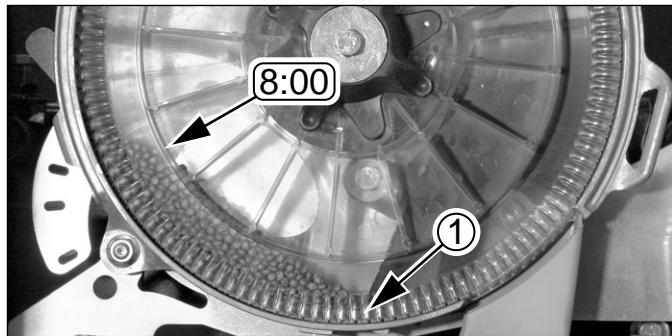


Figure 61
Milo: Seed Inlet Shutter at: 1

29602

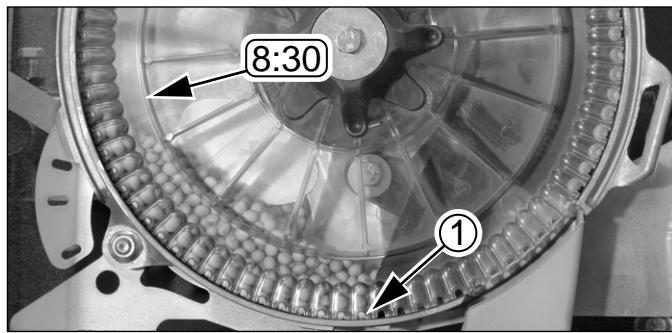


Figure 62
Soybeans: Seed Inlet Shutter at: 2

29604

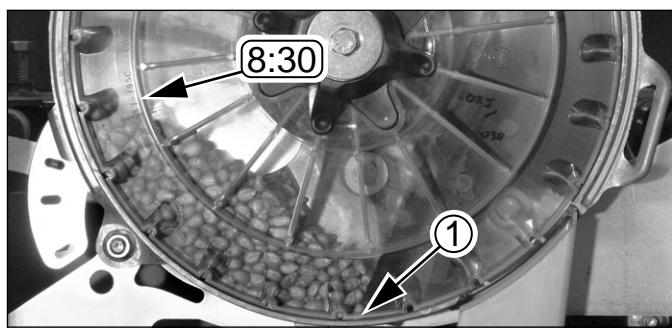


Figure 63
Corn: Seed Inlet Shutter at: 3

29603

NOTICE

Foreign Object Risk:

After clearing a bridge, or a delivery blockage upstream, check the seed pool at the meter for any debris that might have been the original cause. Remove such debris from the meter before planting. Don't run the risk of an object lodging in a seed pocket and causing on-going skips.

Air-Pro® Meter Disk Installation

- Cross-check Seed Rate Chart data against part number/description molded into disks to be used.

NOTICE

Population Risk:

Use the same disk in all active rows.

- Inspect disks to be installed. Do not install damaged or excessively worn disks. Either can cause irregular seeding. Chips and cracks accelerate brush wear.
- Remove meter rain cover (page 55).

Refer to Figure 64 (depicting an empty meter)

- Inspect meter (see page 77 for details).
- Make sure clamp ① is aligned with seat ②.

Refer to Figure 65

- With the seed pocket side facing the meter housing, place the new seed disk on the disk seat.
- Rotate disk clamp ① clockwise 45deg to clamp disk. Clamp seats into detents ③ in disk hub.

Note: On a new meter, or with new brushes installed, force the disk into the brushes to allow the disk clamp to rotate. This condition eases as the brush fibers are trained during initial rotations.

Note: With slightly used brushes, when a disk is first clamped, it is normal for the disk hub to be flat with the face of the disk seat only on the inlet (rear) side. The disk fully seats as it first turns. This condition eases as the brush fibers receive further use.

NOTICE

Brush Mis-Seating Risk:

Rotate disks forward shortly after disk installation. If planting is not anticipated within an hour or two of disk installation, rotate the drive system a few turns to ensure that meter brushes lean in the correct direction. Correct lean improves meter performance and reduces air consumption. This step is particularly important for new brushes.

Brush seating may be accomplished with or without seed present. With the planter raised, rotate the ground drive wheel, or rotate the meter drive shaft, top forward, with a $\frac{7}{8}$ inch (23 mm) open-end wrench.

- Reset seed inlet shutter ④ to setting recommended by Seed Rate Chart, or to your own developed value.
- On the seed monitor console, select the new Material, seed disk Cell Count, and target population.
- Re-install rain cover (page 55).

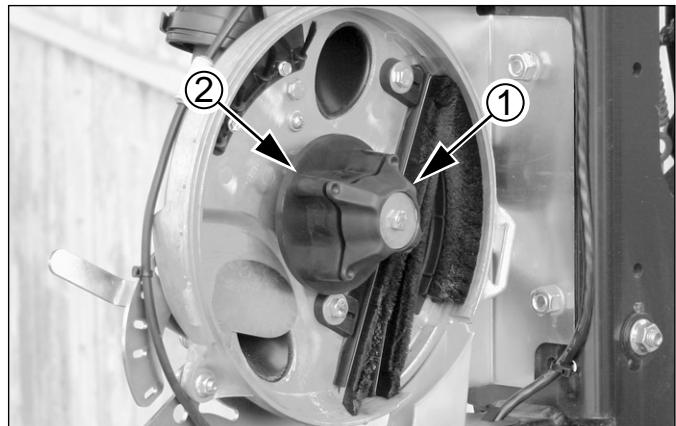


Figure 64
Disk Removed From Meter

29608

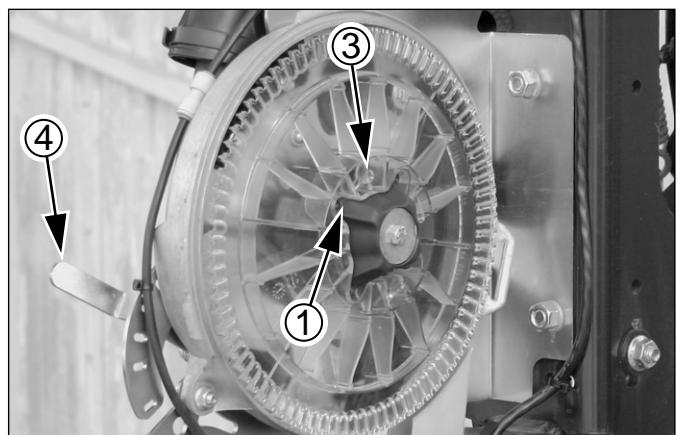


Figure 65
Disk on Clamp and Seat

29611

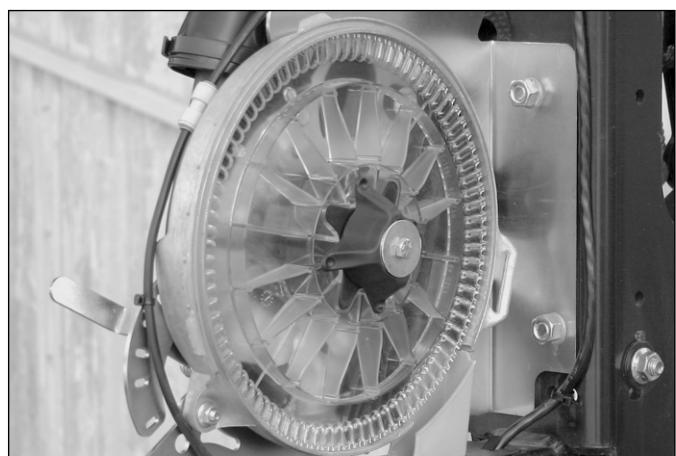


Figure 66
Disk Clamped

29614

Removing a Seed Disk

Refer to Figure 67

1. Remove rain cover. If seed is present, close shutter ④ to prevent more seed from entering meter. Attach funnel (page 76) or place a tarp under the row to collect seed.
2. Hold seed disk in meter. Rotate disk clamp ① counterclockwise 45° to release disk.
3. Tilting top of disk toward meter, slowly remove disk, allowing seed to collect in funnel or to control flow to tarp. Open shutter to release remaining seed up to wing tube.
4. Clean seed from all brushes. Clean disk seat (② in *Figure 64* page 57), so that new disks can seat fully. Inspect brushes for excess wear and damage. See “**Meter Brush Maintenance**” on page 77.
5. Inspect removed disks for excess wear and damage. Set aside any disks requiring replacement. Clean other removed disks and place in storage. See “**Seed Disk Maintenance**” on page 79.
6. Re-install the rain cover (page 55).

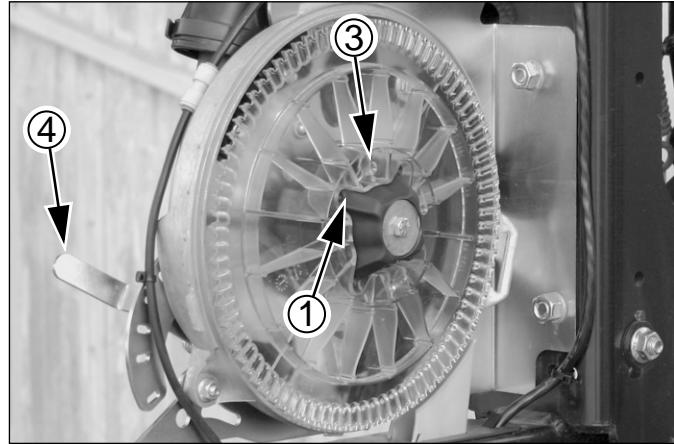


Figure 67
Remove Disk

29611

Row Unit Shut-Off

Skip-row operations, such as planting from every other row when switching from 30 inch twin-row to 30 inch single-row, requires shutting down unused rows.

Shutting off seeding at a row involves 4 to 7 steps:

1. Identify the rows to shut off (page 59).
2. Fully close seed inlet shutter (page 59).
3. Replace seed disk with blank disk (page 59).
4. Lock up row unit to reduce wear (optional, page 59).
5. Reset marker extension (Option, page 115).
6. Reset monitor active row pattern and row spacing to avoid nuisance alarms (see Monitor manual).

Note: Meter drive is not disabled on 25AP row units during shut-off.

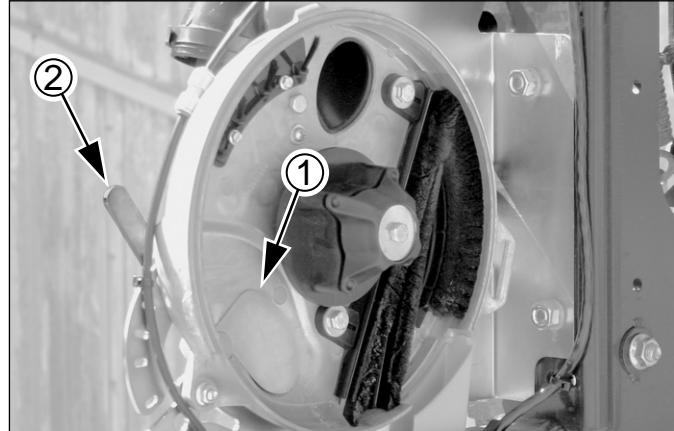


Figure 68
Seed Inlet Shutter Closed

29609

1. Identify Rows to Shut Off

On twin-row planters, openers are installed with short and long opener mounts. If locking up unused rows of a twin-row planter, shut off the rear (long mount) rows.

On single-row planters with mid-length mounts, any rows may be locked up.

If not locking up rows, any rows may be shut off.

2. Close Seed Shutter

Refer to Figure 68 on page 58

Lift the handle ② away from the plate. Move it to the top position, and release the handle into the notch.

Closing the shutter ① prevents meter pressurization air from leaking into the bulk seed air system, resulting in lower pressures in adjacent rows, with risk of skips.

The shutter also stops seed flow from a row as soon as the meter is empty. Bulk seed flow to the row falls to nil as soon as the seed backs up to the air release vent at the top of the meter.

3. Install Blank Disk

Refer to Figure 69

Clean out meter. See “**Meter Clean-Out**” on page 76. Remove seed disk and install blank disk. See “**Air-Pro® Meter Disk Installation**” on page 57.

Blank disks (part number 817-841C) are essential in row shut-off, both to maintain consistent meter back-pressure to meter pressurization and to prevent wear on seed disks and minimize wear on brushes.

Blank disks are engineered to simulate a seed disk with seed in all pockets. Blanks are particularly important on the rows with sensor lines to the pressure chamber.

4. Lock-Up Row

Alternate twin-row units (the rear units) can be pinned in the up position to accommodate single-row spacing.

Refer to Figure 70

The lock-up pins ① are located in a storage hole ② in the row unit mount. To lock up a unit, the unit must be raised, and the pin moved to the lock-up hole ③ in the row unit shank.

Note: Lock-up pins are provided for every other row of twin-row configurations. If you lose a pin, the replacement part number is 805-033C

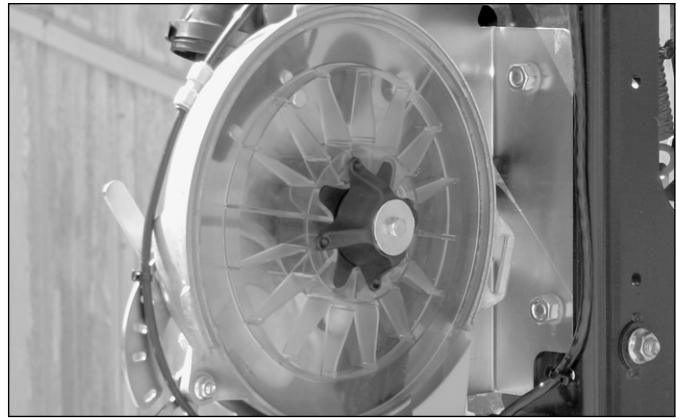


Figure 69
Shutter Closed, Blank Disk Installed

29610

NOTICE

Irregular Seeding Risk:

Always use a blank disk in a shut-off row. Operating with no disk, or with a seed disk but no seed, destabilizes the regulated airflow, particularly at rows with pressure sensor lines.

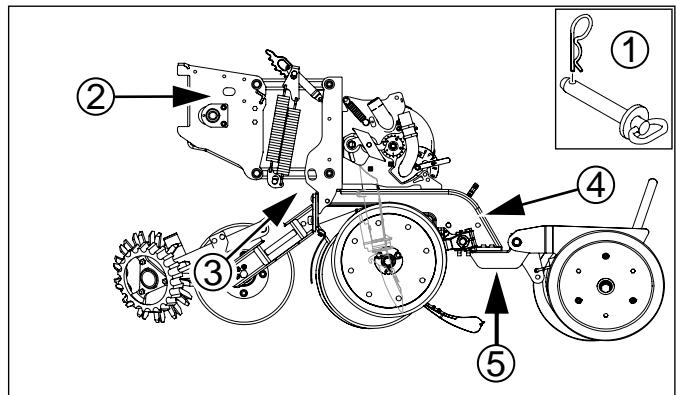


Figure 70
25AP Row Unit Lock-Up Pin

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29983

WARNING

Crushing and Sharp Object Hazards:

Do not attempt to lift a row unit by hand. The weight of the unit, plus the force of the springs (even at minimum) is too great (plus, a free hand is needed for pin insertion). Even with multiple people lifting, hand-lifting is unsafe - there are numerous sharp edges, and the row unit snaps down violently if a grip is lost.

1. Raise the planter. Although this adjustment can be made with the planter lowered, the springs will be in tension, and will require more effort. The extra force may also damage tools.
2. Install lift assist cylinder locks. Lower parking stands.
3. Set the down pressure spring cam to zero, per the instructions on page 48.
4. Raise the row unit high enough that the hole for the pin is above the lower parallel arm. This can be done in several ways, including:
 - a. use a hoist at the rear of the shank ④
 - b. use a jack under the shank extension ⑤

CAUTION

Crushing Hazard:

Use a jack or hoist. Raising a row unit on a block by lowering the planter is risky. The potential for hydraulic failure creates a safety hazard. Full lowering can damage components.

Refer to Figure 71

5. Remove the pin from the storage hole ② and insert and secure it in the lock-up hole ③.
6. Lower row unit until lock-up pin rests on lower parallel arm.

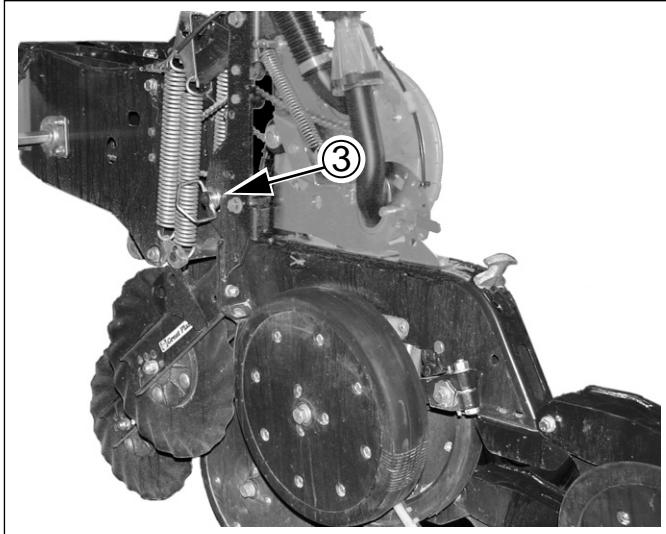


Figure 71
25AP Row Unit Locked Up

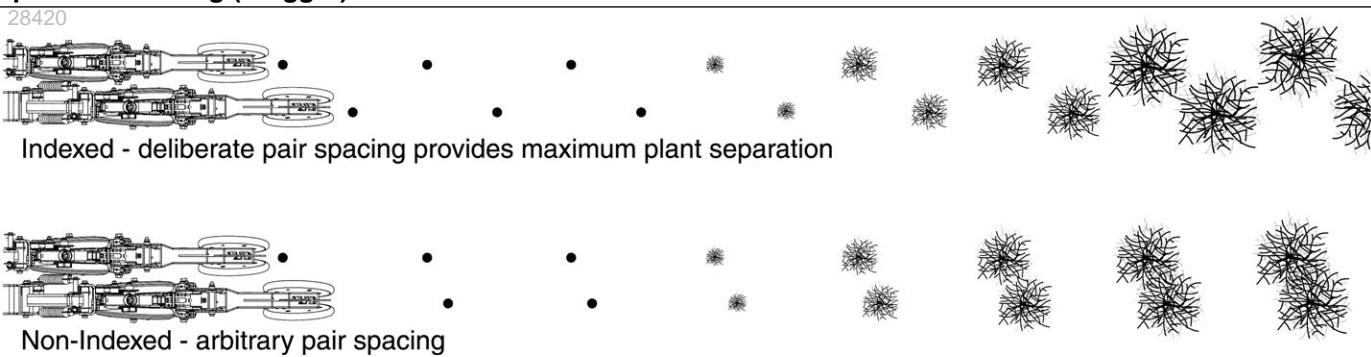
29756

NOTICE

Certain Machine Damage:

Do not pin the row unit while it is in the lowered position. If the pin is inserted below the parallel arm, unit damage occurs as soon as planting begins.

Sprocket Indexing (Stagger)



If you are planting:

- twin-row crops,
- at seed interval spacings above $6\frac{1}{2}$ inches (16.5 cm), you can synchronize each pair of adjacent meters in a twin row so that you achieve the maximum seed-to-seed spacing between the units of the pair.

Refer to the Seed and Fertilizer Rate manual (401-651B) for instructions and charts.

Seed Firmer Adjustments

Series 25 row units include a standard seed flap, and accept one of two optional seed firmers (which may be included in your selected opener bundle).

CAUTION

Row unit disk blades may be sharp. Use caution when making adjustments in this area. To adjust the Keeton Seed Firmer, lower the planter until the disks of the row units are resting on the ground.

Keeton Seed Firmer Adjustment

The optional Keeton Seed Firmer is an engineered polymer shape that slides down the seed trench. It traps seeds as they exit the seed tube and firms them into the bottom of the "V".

Refer to Figure 72

The Firmer is provided with a preset tension which is recommended for using the first year. The tension screw ① can be tightened in subsequent years according to your needs. Firmers should provide just enough tension to push seeds to the bottom of the trench.

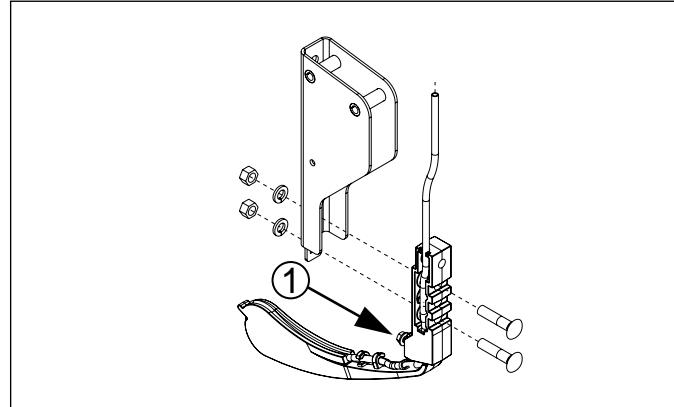


Figure 72
Keeton Seed Firmer

28316

Seed-Lok® Seed Firmer Lock-Up

Optional Seed-Lok® firming wheels provide additional seed-to-soil contact. The wheels are spring loaded and do not require adjusting. In some wet and sticky conditions the wheels may accumulate soil. To avoid problems associated with this, you can lock-up the firmers.

Refer to Figure 73 (which depicts a row unit with discs, side depth wheels/arms and press wheels removed for illustrative purposes - removal is not necessary for lock/unlock)

To lock up Seed-Lok® wheels:

1. Raise planter. Insert lift assist cylinder locks.
2. Lift Seed-Lok® lock-up handle ① until lever stop ② is free to rotate.
3. Rotate lever stop to side/idle position ③. Release lock-up handle ①.
4. Push up on Seed-Lok® wheel ④ until wheel arm latches up ⑤.

To release a locked-up Seed-Lok®:

1. Insert a $\frac{1}{4}$ in tool drive tip in the tool hole ⑥ of the handle ①. Alternatively, lift up on the wheel ④.
2. Rotate the handle clockwise (handle arm up) until the Seed-Lok® wheel releases at the latch point ⑤ and falls free.
3. While holding the handle up, rotate the raised portion of the lever stop ② under both sides ② of the handle at the arm end. Remove the tool.

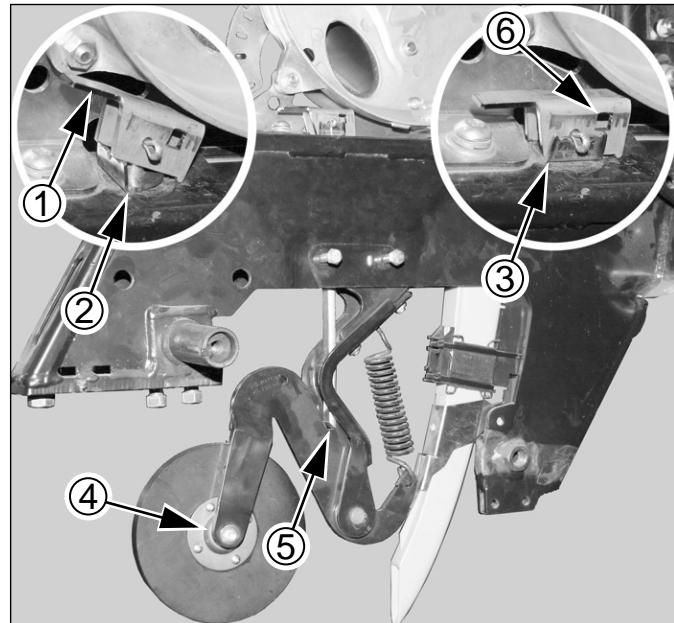


Figure 73
Seed-Lok® Lock-Up

31543

Note: Engage the lever stop under the handle ② when Seed-Lok® is in use. If left disengaged ③, a furrow obstruction could cause unintended lock-up.

Press Wheel Adjustment

The press wheels close the furrow which gently presses the soil over the seed to ensure good seed-to-soil contact for even emergence.

To provide consistent seed firming, the press wheels are free to move downward from their normal operating position. This system maintains closing/pressing action even if the row unit arm is lifted when the disks encounter obstructions.

There are three adjustments available on the press wheel assembly:

Refer to Figure 74

1. Down pressure (shown at maximum)
2. Wheel stagger (shown staggered)
3. Centering (see Figure 76 on page 63)

Press Wheel Down Pressure

Handle ① sets down pressure, which may need adjustment for different soil types and field conditions.

- Relax the handle forward (in the direction of travel) for decreased down pressure.
- Pull the handle ① back for increased down pressure.

Note: Higher press wheel down pressures reduce the down force on the main row unit shank components, such as the openers. High press wheel settings may require an increase in overall row unit down force. See page 47.

Press Wheel Stagger

The factory stagger setting has been found optimal for residue flow. If your conditions appear to require even press wheels, you might try one row before re-configuring the entire planter. To change the stagger:

Refer to Figure 75

1. Raise the planter. Secure with blocks or jack stands.
2. Remove the bolt ④, nut ⑤ and lock-washer ⑥ for the left press wheel ⑧.
3. Move the spacer ⑦ and wheel ⑧ to the forward of the two mounting holes at ②.
4. Re-install the bolt, lock washer and nut. Tighten.

Higher press wheel down pressures reduce the down force on the main row unit shank components, such as the openers. High press wheel settings may require an increase in overall row unit down force. See page 47.

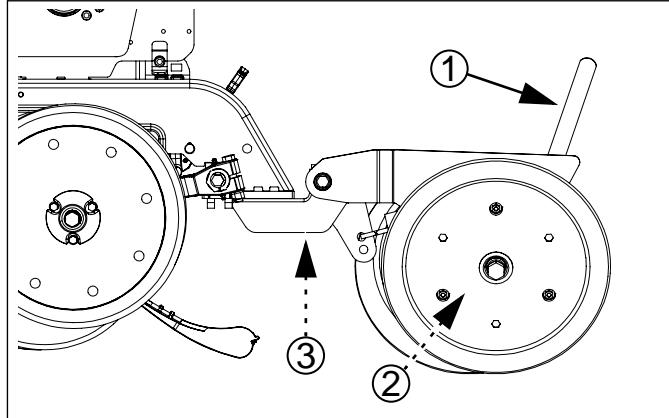


Figure 74
Press Wheel Adjustments

25118

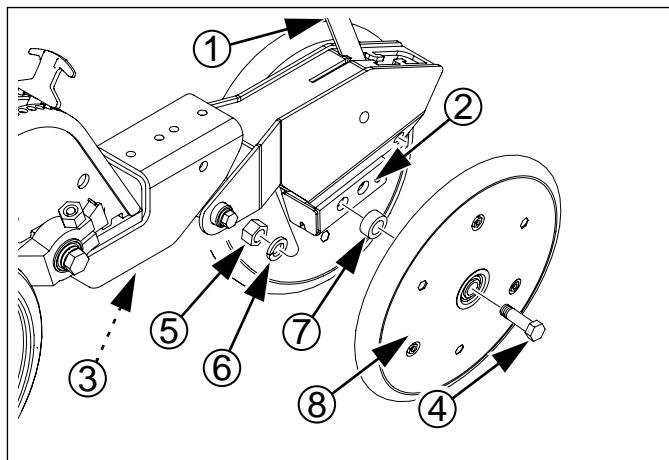


Figure 75
Press Wheel Force & Stagger

22907

Press Wheel Centering

If one press wheel is running in the seed trench, or the wheels are not centered over the trench, the angle ① of the press wheel assembly can be adjusted as follows:

Refer to Figure 76

1. Determine how far, and in which direction, the press wheel assembly needs to move to center the wheels.
2. Raise planter. Secure with blocks or jack stands.
3. Loosen the $\frac{1}{2}$ inch hex-head bolts ② and ③.
4. Turn the hex head cam ④ under the forward hex head jam bolt ③, and move the required amount.
5. Tighten both hex head bolts ② and ③.

If press wheel adjustments do not provide satisfactory furrow closing, your conditions may require alternate press wheels. A variety of wheel assemblies are available. Consult your Great Plains dealer.

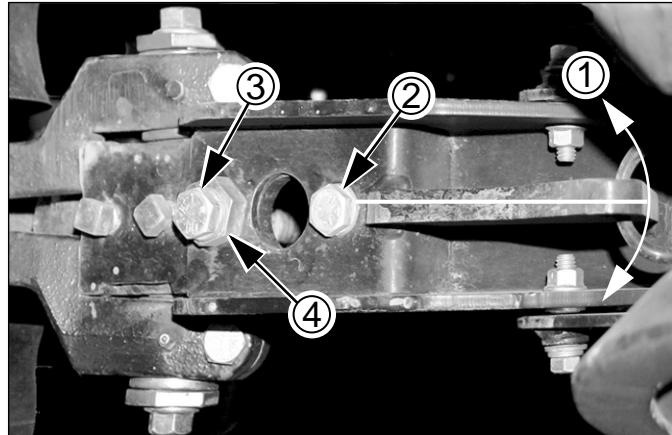


Figure 76
Press Wheel Centering
(View from beneath opener)

25277



Troubleshooting

Planting Rate Problems

When starting up with a new planter, a new crop or a new population it is important to physically double check what the monitor is reporting in the cab by digging seeds. This is to verify that you are set up correctly to plant the desired population. Do not rely solely on the population reported by the optional seed monitor.

Also during start up it is common to encounter alarms and readouts on the optional seed monitor that don't seem to make sense. It is critical to troubleshoot these alarms not only to make sure the planter drive is set properly to hit the target population, but also to fix incorrect entries in the monitor setup to eliminate nuisance alarms.

Before entering the troubleshooting charts to remedy a monitor or population problem, it is helpful to use the following flowchart to get a handle on what may be wrong. The basis for finding what is wrong comes from knowing exactly what the planter is actually doing in the soil. Always dig or observe seed on the ground when checking populations.

1. Is the spacing on the ground correct?	No:	Check the ground drive transmission and range sprocket selections, or the population settings on a hydraulic drive unit. See also " Population Too Low " or " Population Too High " in the troubleshooting charts.
	Yes:	Go to step 2.
2. Is the population reported by the optional seed monitor $\frac{1}{2}$ the actual or is the reported population too high by a factor of 2?	No:	Go to step 3.
	Yes:	An incorrect row spacing value entered in the seed monitor can cause this. Example: 15 inches instead of 30 inches. Correct the row spacing error on the optional seed monitor console. The system can also be off by a large factor if incorrect range sprockets are installed. Check seed rate charts against range and transmission sprockets on the planter.
3. Is the population reported by the optional seed monitor close to the target population?	No:	Check seed rate charts against transmission sprockets selected. See " Population Too Low " or " Population Too High " in the troubleshooting charts.
	Yes:	If slightly under, see " Population Too Low " if slightly over, see " Population Too High ".

Suggested Furrow Check:

Plant a short distance and dig seeds, or run with the closing wheels wired up to leave an open seed trench.

Based on seeds found, determine an average distance between seeds. Compare the distance between seeds to the seed spacing listed in the charts for your population. This is listed as "inches per seed".

Seed Pool Troubleshooting

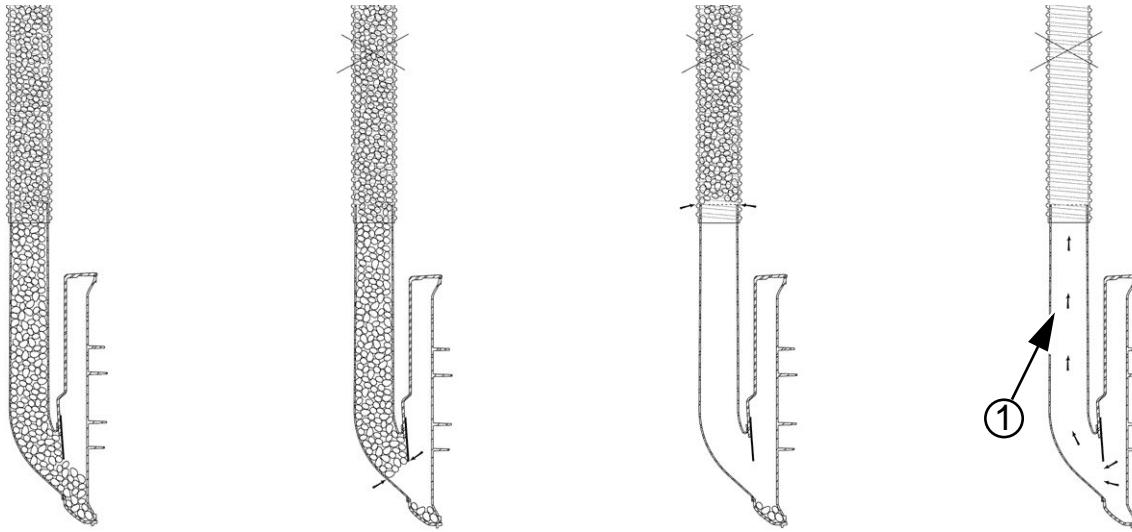


Figure 77
Rear Cross-Section of Air-Pro® Meter in Normal and Row-Failed Conditions

29986

Normal: Filled Inlet is filled to seed box. Seed move slowly down as singulated by meter.	Bridging: Inlet Shutter A bridge at the shutter is blocking flow. Causes may include: <ul style="list-style-type: none">• oversize seed• shutter setting too low• oversize matter in seed• excessive or sticky seed treatment	Bridging: Seed Hose Oversize matter in seed has caused a bridge at the top of the inlet. Causes may include: <ul style="list-style-type: none">• oversize seed• oversize matter in seed• excessive or sticky seed treatment	Empty Hopper No seed arriving from box. Causes may include: <ul style="list-style-type: none">• seed run-out• slide gate closed If hopper is empty, air back-flow ① is also occurring, which can reduce meter pressurization at other rows
Actions: No action required. Continue Planting.	Actions: 1. If shutter was at suggested opening, increase one notch. 2. Check seed pool for foreign matter. 3. Resume planting.	Actions: 1. Close shutter. 2. Tap on hose/tube junction. 3. Check seed pool for foreign matter. 4. Resume planting.	Actions: 1. If row is active, add seed or check slide gate. 2. If row is inactive, close shutter. 3. Resume planting.

Magnehelic® Gauge Troubleshooting

If the Magnehelic® gauge does not read zero with the fan off, inspect the gauge, and re-zero as needed.

Problem	Cause	Solution
Non-zero with fan off	Zero drift	Re-zero per instructions below
Gauge reading lower than sensor	Relief port plug missing/damaged	Replace plug
	Breather line blocked or kinked	Clear breather line
	Leak in sensing line	Check line to chamber
	Gauge damaged	Check for loose cover, damaged O-ring

Check for chamber and breather line problems before re-zero. Re-zero cannot accurately compensate for leaks and blockages.

Re-zero the Magnehelic® gauge on level ground with the fan off, and if possible, under no-wind conditions. Turn the set screw ① on the meter face until it reads zero from the tractor driver's viewing position.

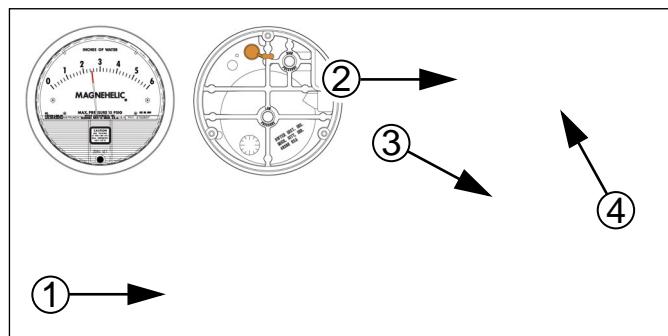


Figure 78
Magnehelic® Gauge

29842

Port ID for Troubleshooting:

- ② Over-pressure relief port (with plug in place)
 - ③ Low-pressure port (breather/atmospheric pressure)
 - ④ High-pressure port (from manifold chamber)
- Alternate high/low ports are plugged.

Winter testing/maintenance advisory:

Gauge readings may be inaccurate or sluggish below 20°F

Population Troubleshooting Charts

Population Too Low

Problem	Cause	Solution
Overall Low Population	Incorrect seed rate	Using Seed Rate Manual , check: <ul style="list-style-type: none"> seed disk selection, Range/Transmission sprocket setup, and tire size and inflation.
	Empty pockets on disk (skips) due to insufficient air pressure.	Methodically increase the meter pressurization. See “ Fan and Adjustment ” on page 43.
	Empty pockets on disk (skips) due to sticky seed treatments not allowing seed to rapidly fill the pockets.	Increase seed lubricant.
	Empty pockets on disk (skips) due to rough field conditions causing seeds to fall from the disks.	Decrease field speed or increase the air pressure in the meter.
	Empty pockets on disk (skips) due to seed pool too low, and seeds are not filling every pocket on the disk.	Open shutter one notch.
	Empty pockets on disk (skips) due to disk speed too high, and pockets are not filling.	Decrease field speed or change to a higher cell count disc.
	Empty pockets on disk (skips) due to singulation (4 tufted) brush too aggressive.	Check for matted, stuck together fibers. Wash, scrape clean, or replace as needed.
	Empty pockets on disk (skips) due to seed too big for pocket.	Select the correct disk for the seed size.
	Seeds are not falling from disk, and get carried past drop zone. Static electricity can cause small, lightweight seeds to cling to the pocket and not fall out.	The graphite component of Ezee Glide Plus addresses this issue. Increase the amount of Easy Glide Plus and/or more thoroughly mix the lubricant into the seed.
	Air pressure too low, as confirmed by gauge.	Increase fan speed or reduce butterfly valve setting.
	Air pressure too low, but gauge reading is within range or reading high.	<ul style="list-style-type: none"> Inspect the $\frac{1}{4}$ inch sample lines from the row units up to the sensor chamber for leaks (page 66). Make sure all non-planting rows have blank disks and shutters are closed (page 59). Re-zero the gauge with the fan off (page 66). Check gauge vent line for kinks, pinches or plugging (page 66).
	Excess field speed	Plant within speed ranges recommended in Seed Rate Manual .
	Incorrect speed sensor constant.	Perform speed calibration per seed monitor manual.
	Incorrect magnetic speed sensor gap.	Check and adjust (page 79).
	(Option) Incorrect radar speed sensor angle.	With planter lowered, check radar speed sensor angle per DICKIE-john® recommendations.

Population Too Low

Problem	Cause	Solution
Overall Low Population, cont.	Pass gaps too large	Check marker extension (page 115). For GPS, check planter size programmed.
	Actual field size is different	Population may be correct, and calculations are not.
	Seed monitor reporting excess area	Readings can vary with conditions (wheel slippage, and effective rolling radius in soft soils) and planting patterns.
Low Population, Single Row	Shutter opening too narrow - starving meter of seed (low seed pool)	Adjust shutter to higher setting.
	Meter starvation due to bridging at shutter	Re-adjust for shutter bridging (page 56). If seed is treated, increase seed lubricant.
	Meter starvation due to blockage above inlet	Clear blockage (page 56).
	Meter starvation due to bridging above inlet, caused by high levels of seed treatment	Clear bridge (page 56). Increase seed lubricant.
	Incorrect seed disk on one row	Install correct seed disk.
	Chain skipping at row unit.	Check chain, idler and sprocket condition.
	Skips due to low meter pressurization at one or several rows	Check shutter setting. Check for excess wear on seed drop brush. Check for loose or leaking pressure hose.
	Skips due to skipping chain	Check for worn chain, worn idlers, low chain slack (page 83) and failed meter bearing.
	Skips due to debris in disk pockets	Remove rain covers. Inspect and clean out disks.
	Row has blank disk installed	Replace with seeding disk.
Low or Erratic Seed Flow	Seed tube plugged	Raise planter, expose bottom of seed tube and clean out.
	Seed meter plugged, due to operation with fan shut off, or manifold pressure too low.	Close shutters. Clean-out meters. Set fan for correct manifold pressure. Resume planting.

Population Too High

Problem	Cause	Solution
Overall High Population	Incorrect seed rate	Check seed rate charts
	Two seeds per pocket on the disk (doubles), due to excess meter pressurization	Methodically decrease the meter pressurization. See " Fan and Adjustment " on page 43.
	Two seeds per pocket on the disk (doubles), due to pockets too large for the seed	Select a disk with smaller pockets.
	The meter pressurization is too high, as confirmed by gauge	Reduce fan speed or increase butterfly valve setting.
	Air meter pressure too high due to pressure sensor not zeroed properly.	Re-zero the gauge with the fan off.

Population Too High

Problem	Cause	Solution
Overall High Population, cont.	Air pressure too high, but gauge is within range or reading low.	<p>Check:</p> <ul style="list-style-type: none"> Inspect the $\frac{1}{4}$ inch sample lines from the row units up to the sensor chamber for leaks (page 66). Make sure all non-planting rows have blank disks (page 59). Check that rubber pressure relief plug is seated in gauge (page 66).
	False alarms or actual seed rate errors due to monitor setup with incorrect row count, spacing or active rows	When troubleshooting population issues, always first rule out seed monitor setup. Review planter configuration and monitor setup.
	Incorrect cell count	Replace seed disks with correct disks, or reset rate for current disks (if within range).
	Incorrect speed sensor constant.	Perform speed calibration per seed monitor manual.
	Incorrect magnetic speed sensor gap.	Check and adjust (page 79).
	(Option) Incorrect radar speed sensor angle.	With planter lowered, check radar speed sensor angle per Dickey-John® recommendations.
	Doubles due to incorrect disk for crop or seed size	Use recommended disk for crop and seed size.
	Sticky seeds: excess seed treatment	Increase seed lubricant.
	Incorrect speed sensor constant	Perform speed calibration per Dickey-John® monitor manual.
	Overlapping passes	Check marker extension (page 115). For GPS, check planter size programmed.
High Population, Single Row	Actual field size is different	Population may be correct, and calculations are not.
	Seed monitor under-reporting area	Readings can vary with conditions (wheel slippage, and effective rolling radius in soft soils) and planting patterns.
	Excess meter pressurization causing doubles	Check shutter.
	Worn seed-drop brush and/or strip brushes allowing excess seed to pass	Replace worn brushes.
	Worn meter bearing causing seed disk wobble and doubles	Replace meter bearing.
	Incorrect seed disk with higher cell count.	Install correct disk.

Population Related

Problem	Cause	Solution
Overall Population Alarms	False alarms or actual rate errors due to monitor setup with incorrect [active] row count or spacing	When troubleshooting population issues, always first rule out seed monitor setup. Review planter configuration and monitor setup.
	Incorrect cell count	Replace seed disks with correct disks, or reset rate for current disks (if within range).
	Improper gap on magnetic speed sensor.	Check speed sensor on planter for a gap to toothed wheel of: $\frac{1}{32}$ inch (0.020-0.040 inch, 0.5-1.0 mm). Improper gap can cause erratic speed signal causing monitor to falsely report improper planting rate.
	Incorrect speed sensor constant	Perform speed calibration per monitor manual.
	(Option) Incorrect radar speed sensor angle.	With planter lowered, check radar speed sensor angle per DICKY-john® recommendations.
	Seed run-out. Due to unequal outlets per box division, and if planting across slopes, some rows will run out before others.	Re-distribute seed to favor rows that have run out, and plan to re-fill shortly.
Mismatch Between Reported and Furrow Population	Small seeds (example milo) are not reliably sensed in the seed tube	Run with rain covers in place to minimize ambient light intrusion. Use the population scaling factor in the seed monitor system to compensate for missed seeds. Remember to set this back to 100% for large seeds.
	Seed tube sensor is not counting all seeds	Clean the seed tube of graphite and dust buildup with long narrow seed tube brush. Replace sensors that malfunction.
Excessive Seed Cracking	Incorrect seed pocket size	Use correct disk for seed.
	Damaged, old or dried-out seed	Use new seed.
	Unclean seed	Use clean seed.
Skips and Bare Spots After Turns	Fan was turned off at turns	Leave fan running; meter pressurization must be maintained during turns, or seed will fall out of disk pockets.
	Insufficient hydraulic flow to keep fan running at speed required to maintain meter pressurization	Check tractor capability against requirements (page 97). If sufficient: <ul style="list-style-type: none"> • Fold markers before engaging lift. • Use a less aggressive lift rate. • Monitor meter pressurization during end-of-pass operations.
Seed too shallow or scattered on ground from a single row	Bottom of seed tube damaged.	Replace seed tube. Avoid setting planter straight down. Use forward motion when lowering.
	Row not penetrating in tire tracks.	Increase down force on parallel arm springs.
	Opener depth too shallow.	Change side depth wheel setting.

Population Related

Problem	Cause	Solution
Twin Rows were timed but became out of time.	Timing will change when a population change has been made.	Re-time meters from the population based timing chart.
	Chain has jumped.	Check sprockets and chain for excessive wear or rusty stuck links.

General Troubleshooting

Problem	Cause	Solution
Population Alarms	See “ Population Troubleshooting Charts ” on page 67.	
Excess Seed Remaining	See “ Population Troubleshooting Charts ” on page 67.	
	Field size different. Excessive gaps between planter passes.	After ruling out population problems, re-check geography. Adjust marker, page 115.
Seed Consumption Too High	See “ Population Troubleshooting Charts ” on page 67.	
	Field size different. Excessive overlap. Irregular shaped field.	After ruling out population problems, re-check geography. Adjust marker, page 115.
Rows Not Planted	If not detected by optional seed monitor, check for plugged row-unit seed tube	Lift planter, expose bottom of seed tube and clean out.
Uneven seed spacing	See “ Population Troubleshooting Charts ” on page 67.	
	Excessive field speed.	Reduce field speed.
	Unclean seed.	Use clean seed.
	Damaged seed tube	Inspect; repair or replace.
	Seed-Lok® plugging.	Lock up Seed-Lok®, page 61.
	Row-unit discs not turning.	See “ Row-unit discs not turning freely ” in this Troubleshooting chart.
	Worn/rusted sprockets and/or chain idler or bearings.	Check and replace any worn/rusted sprockets or chain idlers.
	Partially plugged row-unit seed tube.	Lift up planter, expose bottom of seed tube and clean out.
	Lack of proper seed lubrication on seed.	See “ Seed Lubricant ” on page 91.

General Troubleshooting

Problem	Cause	Solution
Uneven seed depth	Excessive field speed.	Reduce field speed.
	Planting conditions too wet.	Wait until drier weather.
	Incorrect coulter depth setting.	See coulter manual or set unit mounted coulter.
	Excessive or improper row unit down pressure spring setting.	See “ Row Unit Down Pressure ” on page 47.
	Damaged seed tubes.	Check seed tubes for damage.
	Seed-Lok® building up with dirt.	Lock up Seed-Lok®, page 61.
	Row-unit not penetrating low spots.	Adjust row-unit, see instructions beginning on page 47.
	Rough planting conditions.	Rework the field.
	Seed firmer not in place and set to correct tension.	See “ Seed Firmer Adjustments ” on page 61.
Press wheel or row-units plugging	Planting conditions too wet.	Wait until drier weather.
	Too much pressure on row-units.	Reduce down pressure on row-units.
	Coulters set too deep, bring up excess dirt and moisture.	Check coulter adjustment.
	Planter not set to run level from front to rear.	Check tool bar height page 18
	Backed up with planter in the ground.	Clean out and check for damage.
	Failed disc bearings.	Replace disc bearings.
	Disc blades worn.	Replace disc blades.
	Scraper worn or damaged. Side depth wheels not set correctly.	Adjust side depth wheels page.
Row-unit discs not turning freely	Row-unit plugged with dirt.	Clean row-unit.
	Planting conditions too wet.	Wait until drier weather.
	Incorrect side depth wheel adjustment	See “ Side Gauge Wheel Adjustment ” on page 53.
	Seed-Lok® is plugging row-unit.	Lock up Seed-Lok®, page 61.
	Failed disc bearings.	Replace disc bearings.
	Bent or twisted row-unit frame.	Replace row-unit frame.
	Partially plugged row-unit seed tube.	Lift up planter, expose bottom of seed tube and clean out.
Press wheels not compacting the soil as desired.	Incorrect spring handle setting	See “ Press Wheel Adjustment ” on page 62.
	Insufficient row unit down-force	See “ Row Unit Down Pressure ” on page 47.
	Use of incorrectly shaped tire for your conditions.	Wedge shaped wheels work best on narrow spacings and in wet conditions. Round edge wheels work best in wider row spacings and drier conditions.
	Not level front to rear.	Check tongue height and top link adjustment.
	Wheel stagger needs adjustment for conditions	See “ Press Wheel Adjustment ” on page 62.
	Too wet or cloddy	Wait until drier weather or rework ground.

General Troubleshooting

Problem	Cause	Solution
Hydraulic marker functioning improperly, or not at all	Marker/Fold switch set to Fold.	CFM Switch must be set to "Marker". Set tractor remote circuit to Neutral or Float before operating switch.
	Marker/Aux valve set to Aux	On a planter with optional Auxiliary Hydraulics, selector valve must be set to Marker for markers to function. Set tractor remote circuit to Neutral or Float before changing valve.
	Air or oil leaks in hose fittings or connections.	Check all hose fittings and connections for air or oil leaks.
	Low tractor hydraulic oil level.	Check tractor hydraulic oil level.
	Loose or missing bolts or fasteners.	Check all bolts and fasteners.
	Needle valve(s) plugged.	Open needle valves, cycle markers slowly and reset needle valves, refer to page 114.
Marker disk does not mark	Disk angle too straight for soil conditions	Reverse marker disk to pull or throw dirt.
Speed Reading Doesn't Match Tractor	Monitor speed reading, using optional radar, will only match tractor with planter lowered. (Speed reading with magnetic pickup falls to zero when lifted.)	If speeds don't agree during planting (with planter lowered), re-calibrate radar speed sensor with planter lowered.

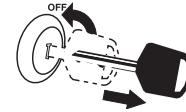


Maintenance and Lubrication

Maintenance

Proper servicing and maintenance is the key to long implement life. With careful and systematic inspection, you can avoid costly maintenance, downtime, and repair.

Always turn off and remove the tractor key before making any adjustments or performing any maintenance.



WARNING

Crushing Hazard:

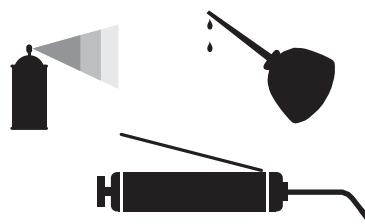
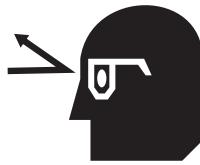
Always have transport locks in place when working on implement. You may be severely injured or killed by being crushed under a falling implement.



WARNING

High Pressure Fluid Hazard:

Check all hydraulic lines and fittings before applying pressure. Fluid escaping from a very small hole can be almost invisible. Use paper or cardboard, not body parts, and wear heavy gloves to check for suspected leaks. Escaping fluid under pressure can have sufficient pressure to penetrate the skin. If an accident occurs, seek immediate medical assistance from a physician familiar with this type of injury.



1. After using your planter for several hours, check all bolts to be sure they are tight.
2. Remove excess slack from chains. Clean and use chain lube on all roller chains as needed.
3. Maintain proper air pressure in planter tires.
4. Keep disk scrapers properly adjusted.
5. Clean planter on a regular basis. Regular and thorough cleaning will lengthen equipment life and reduce maintenance and repair.
6. Lubricate areas listed under “**Lubrication**” on page 86.
7. Replace any worn, damaged, or illegible safety labels by obtaining new labels from your Great Plains dealer.

Material Clean-Out

When planting is completed, it is commonly the case that some seed remains. There may be seed in the hoppers, hose lines, and meters.

Refer to Figure 79

The planter includes an 817-811C^a container ① for meter clean-out, stored in a spring-loaded holder at the right rear of the air manifold. The container can hold all the seed in the meter and inlet (up to a closed slide gate).

The container can be converted into a true funnel for complete system clean-out.

Note: The hoppers are connected to the rows with clamped hose, and are not intended to be routinely unlatched and tipped for clean-out.

Funnel Conversion

Materials and tools needed:

- ② a length of 1½ inch I.D. hose
- ③ a worm drive clamp with a working diameter of approximately 1½ to 2¼ inch
- a hacksaw^b with fine-toothed blade

Trim the sump ④ from the funnel. Slide the hose ② fully onto the funnel tip. Secure with clamp ③ (do not over-tighten clamp, the funnel wall be crushed).

The choice of complete system clean-out process depends on whether you are using the 817-811C as a container or funnel.

Seed Clean-Out (Container)

1. Scoop or vacuum as much seed as possible from the top of the hoppers.
2. Perform a meter clean-out per page 76.

Seed Clean-Out (Funnel)

1. Close slide gate at hopper (slide gate only exists on models with serial number B1013R and earlier).
2. Attach funnel as for meter clean-out (page 76), with hose routed to bucket or other larger container.
3. Use slide gate to control seed flow until meter, inlet and hopper are empty (slide gate only on models B1013R-).

CAUTION

Possible Dust and Chemical Residue and Fume Hazards:

Wear a respirator, and any other protective equipment specified by the seed supplier and/or seed treatment supplier. Expect chemical residue, dust and fumes during clean-out.

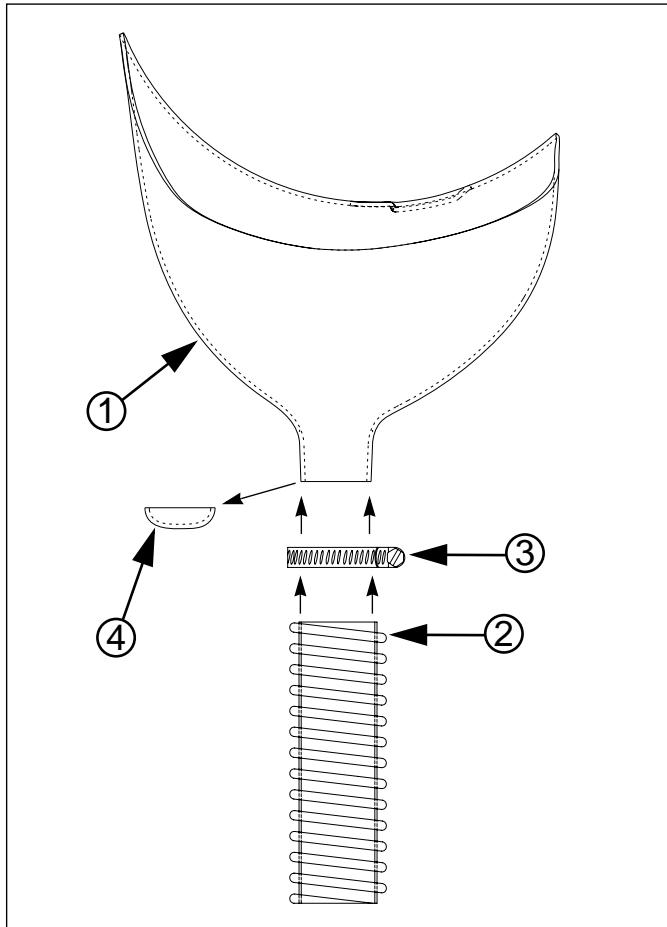


Figure 79
Convert Container to Funnel

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a. The funnel does not fit rows that are to the left of gauge wheels on twin-row planters. Use vacuum or tarp on those rows.

b. The funnel wall is thin ABS. Scissor-type pipe-cutting tools may fracture it. Rotary-type pipe cutting tools may slip off.

Meter Clean-Out

Refer to Figure 81

The 817-811C seed collection accessory (funnel ①) may be attached to the housing of the seed meter, freeing your hands for other tasks during clean-out.

Note: The funnel does not fit rows to the left of gauge wheels on twin-row planters. Use vacuum or tarp collection on those rows.

Note: It may be necessary to raise a twin-row planter to obtain clearance for the funnel. Secure with blocks or jack stands if the planter is raised.

1. Close the seed inlet shutter on the meter (page 55). This minimizes the seed volume at disk removal.
2. Remove the rain cover (page 55). The funnel cannot be snapped in place with the cover installed.
3. Align the left (rear) end of the funnel lip ③ with the top of the lower (rear) cover latch ear. Place the right (front) end of the funnel lip ④ between the meter housing and the seed tube.
4. Rotate the funnel forward until the slot at lip center engages a tab on the bottom center of the meter housing.
5. Remove the seed (page 58).
6. Slowly open the seed shutter (page 55) to empty the seed up to the slide gate.
7. If seed remains in the hopper, use the slide gate to control the volume of flow.

Refer to Figure 80

8. Clean seed from all brushes (shop vac recommended).
9. Inspect brushes (page 77).
10. Rotate funnel clockwise, remove and empty.
11. For imminent operations:
Install next seed wheel or blank disk (page 59) for operations. Set inlet shutter for next seed (page 55).
12. For storage:
Close seed inlet shutter. Leave disk out.
Close Y-tube (if any).
13. Re-install rain cover (page 55).

At end-of-season clean-out, inspect a few seed meter air release screens. If they require cleaning, consider cleaning all rows.

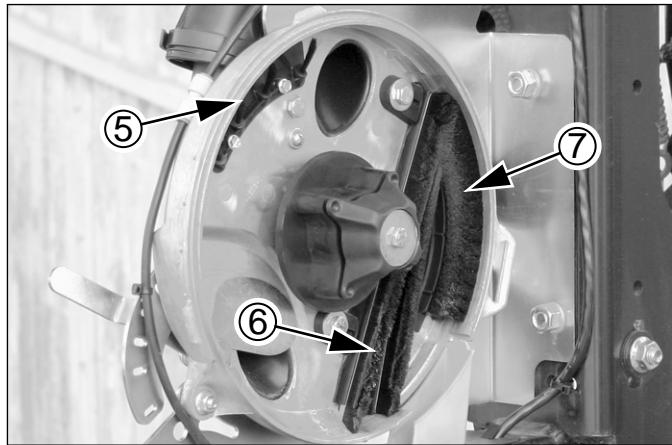


Figure 80
Brush Inspection

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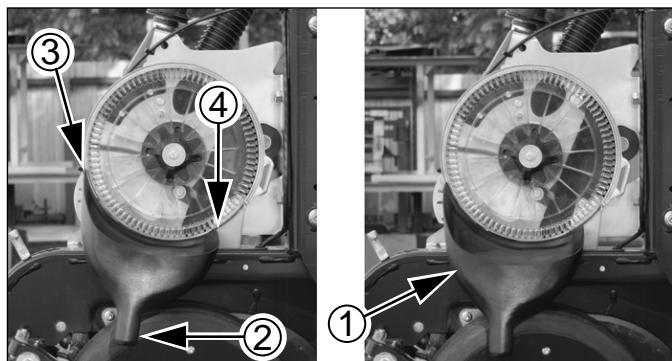


Figure 81
Funnel Positioned and Engaged

29612

Alternate Meter Clean-Out

To use a shop vacuum cleaner, with narrow hose nozzle, to clean out a meter:

- Close the seed shutter.
- Release the meter clamp, hold the disk against the meter.
- Tip the top of the disk away from the meter.
- Insert hose nozzle and remove seed.
- Open shutter to allow seeds in inlet and drop hose to flow to vac nozzle.

Meter Brush Maintenance

⚠ CAUTION

Possible Chemical Hazard:

Wear a respirator for brush cleaning. Brushes will have talc and graphite residue, and may have residues of hazardous seed treatments.

Refer to Figure 82

A HEPA vacuum cleaner is recommended for brush cleaning. Washing brushes is not recommended and may cause matting. Do not scrape them with sharp instruments.

The first indications of excess brush or damage wear are normally observed on the seed monitor or in air system operation.

- If the tufted brushes ⑤ are worn/damaged, the seed “double” rate rises, increasing population.

Finding an occasional cracked seed “hung up” on a tuft fiber is not uncommon, and is not an indicator that brush maintenance is required. Merely remove the seed.

- If the strip brushes ⑥ are worn/damaged, air pressure regulation may become unstable, or require increasing fan speed over time.

If you find you need to exceed recommended fan rpm ranges, the regulated air system may be taking too much air due to meter leakage.

In severe cases, seed may leak past the strip brushes, causing spikes in population. If you frequently observe seed in between the strip brushes, one or both may need replacement.

- If the seed drop brush ⑦ is worn/damaged, its anti-static effect may fade, which can result in “skips” due to smaller seeds failing to release, and lower populations.

If an obvious groove is worn in the drop brush, replace it.

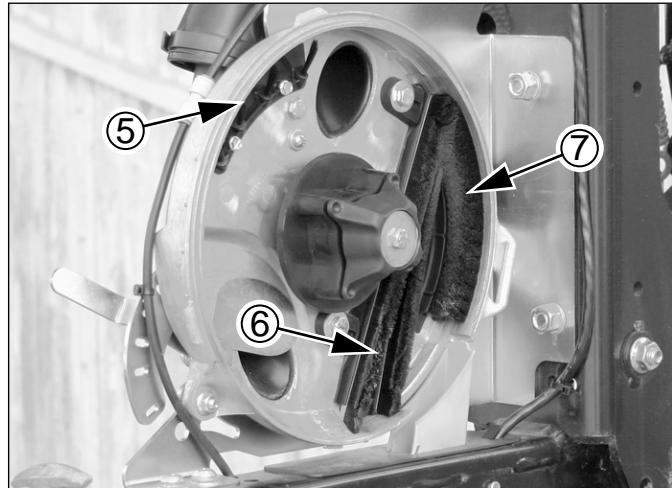


Figure 82
Brushes

29608

Meter Brush Replacement

Consult the Parts manual (401-652P) for current replacement part numbers.

Refer to Figure 83

Tufted Brush Replacement

1. Remove and save both 10-24 hex head cap screws **(11)** and nylock nuts (not shown).
2. Remove the tufted brush assembly **(12)**, and replace with new assembly.
3. Re-insert the 10-24 screws, and re-start the nylock nuts. Carefully tighten each nut just until plate has no play under the screw heads.
4. Add a half turn to the nuts. Do not tighten fasteners to normal 10-24 torque, or the plate may fracture.

Strip Brush Replacement

Note: Do not loosen or remove any of the three $5\frac{1}{16}$ -18 cap screws **(15)** retaining the brush holder.

1. Insert the flat blade of a large screwdriver into the slots of the brush holder snaps **(13)**. Turn each snap clockwise to release brush holder **(14)**.
2. Prepare to catch drop brush **(16)** (which will fall lose). Slide brush holder left and up to free front edge from under washer **(17)**. Remove brush holder.
3. Remove used strip brushes from the holder by sliding them downward out of the grooves.

Refer to Figure 84

4. Insert replacement strip brushes into grooves at holder bottom so that notched ends **(18)** are at the bottom.

Refer to Figure 83

5. Check strip brush positioning with a trial re-insertion of the brush holder. The ends of the long brush must fit snugly into meter housing grooves at top **(19)** and lower rear **(20)**. The bottom end of the short brush must fit snugly in the lower front housing groove **(20)**. If any significant force is required to re-seat the brush holder, a strip brush is likely too high or too low.
6. Relax the position of the brush holder, re-position the drop brush (see below), and re-seat the brush holder.
7. Starting with the bottom snap, swing snaps **(13)** back into engagement.

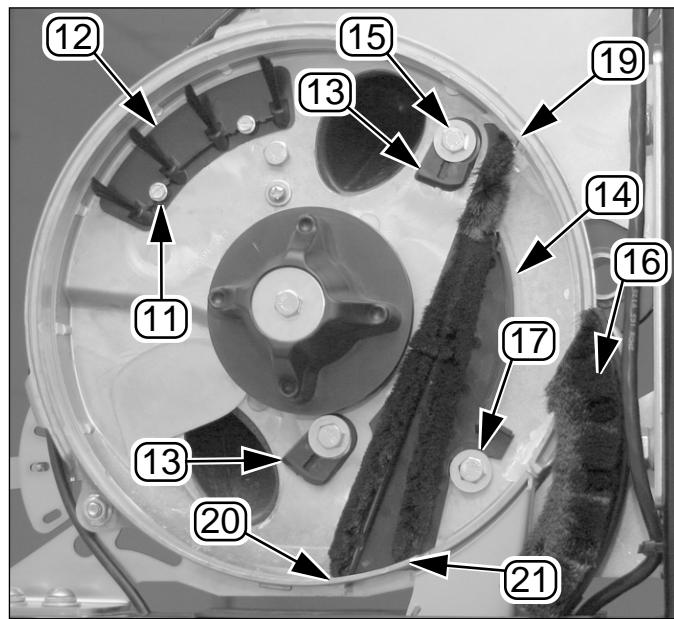


Figure 83
Brush Replacement

29719

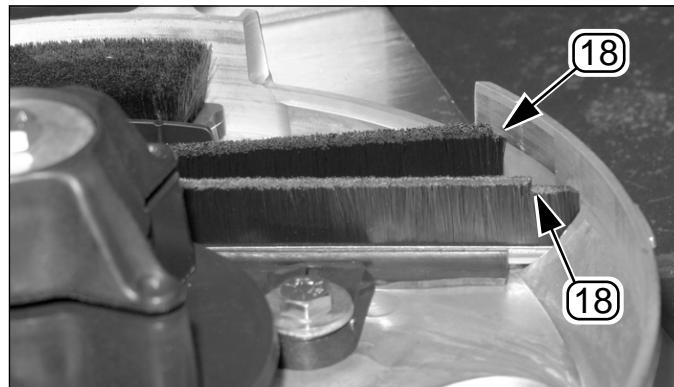


Figure 84
Strip Brush Notches

29720

Seed Disk Maintenance

Refer to Figure 85

When removing seed disks, inspect them for wear and damage. If there is any seed dust or treatment build-up in the cell pockets ①, or along the raised wiper ridges ②, clean the disks and re-inspect.

Replace disks for conditions including:

- Chips at circumference ③. These will leak air.
- Chips at edges or in sculpted surfaces of cell pockets ①. These can leak air and/or adversely affect singulation.
- Cracks over 2 inch (5 cm) long in the working face ④ of the disk, or any cracks in support webs or to an edge.
- Warping - if any part of the disk does not press firmly on the seed drop brushes (page 57) in operation, replace the disk.
- Wear - if a wiper ridge is worn away, replace the disk. If the seed pockets are worn through, or the air ports ⑤ have enlarged, replace the disk.

Cleaning and Storing Seed Disks

Use warm or hot water, mild soap, and a sponge or soft brush to remove build-up.

If disks are washed, allow them to dry completely prior to storage.

Retain original shipping cartons for disk storage. Otherwise, store them on edge (and not leaning), or stacked horizontally on a spindle, to eliminate any risk of warps. Any seed residue on disks may attract pests. Fully enclose dry disks to prevent rodent damage.

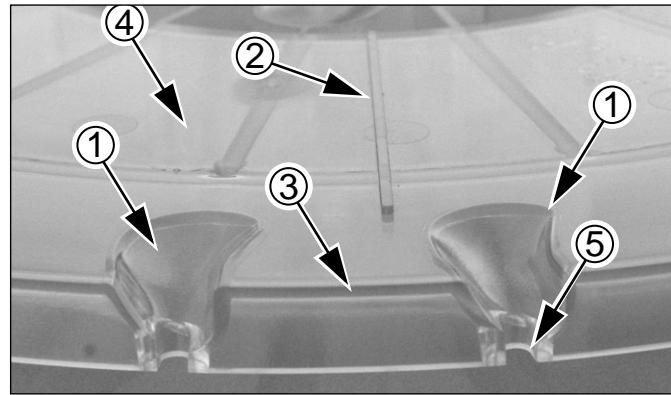


Figure 85
Disk Seed Cells and Wiper

29613

CAUTION

Possible Chemical Hazard:

Wear gloves when washing disks. Avoid spray. Do not wash disks where food is prepared, or where cookware or dinnerware is washed. Seed disks will have talc and graphite residue, and may have residues of hazardous seed treatments. Although the disks are dishwasher-safe, do not wash them in an appliance also used for food preparation or food serving items.

Speed Sensor Gap

Refer to Figure 86

1. Raise planter (page 20). Rotate ground drive wheel until a disk tooth is directly at sensor center-line.
2. Check that wheel teeth are on sensor center-line side-to-side. As needed, loosen collars on either side of disk and adjust.
3. Check that center-line of sensor is pointed at center-line of transfer shaft. As needed, loosen mounting bolts ⑥ and adjust.
4. Check gap ⑦ between top of sensor and toothed wheel for a dimension of:
 $\frac{1}{16}$ inch (1.6 mm)

To adjust, loosen jam nut ⑧. Adjust base nut ⑨ to set gap. Re-tighten jam nut.

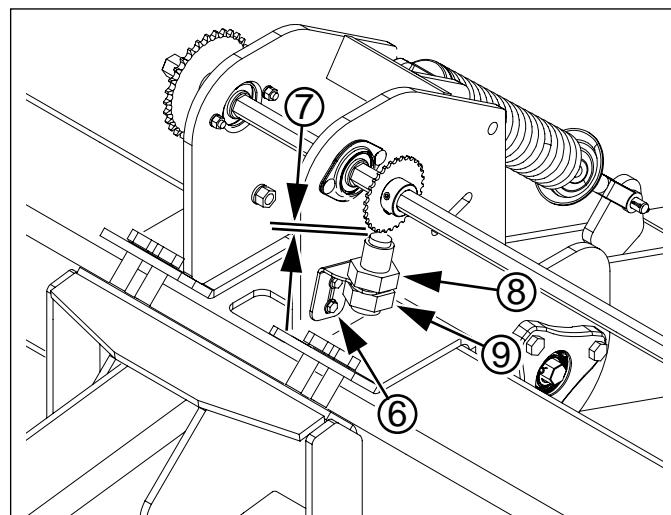


Figure 86
Speed Sensor Gap

31008

Air Box Residue Clean-Out

Planting in extremely dusty conditions, particularly dusty and humid conditions, or otherwise sticky soils, can lead to air residue build-up inside the airbox. This residue can cause seed delivery blockages.

Refer to Figure 87 and Figure 88 (Figure 87 depicts a partially and a completely plugged agitation port, and build-up in the RH plenum chamber)

Whenever opening the airbox clean-out door ①, inspect the agitation ports ②. If any are partially or completely blocked, follow the clean-out instructions on this page.

Seasonally, remove the inspection ports on each of the airbox, and inspect plenum chambers 1 (LH) and 16 (RH). If any build-up is observed, follow the more comprehensive inspection steps and clean-out instructions on this page.

1. Spot the planter at a suitable location for clean-out and follow the parking instructions (page 37).
2. If seed is loaded, close the slide gate for the hopper or bulk seed box.
3. Set out a tarp for recovery of any expected seed still in the airbox. Open the airbox clean-out door ①.
4. Remove the inspection port covers from each end of the airbox (not shown in figures).
5. Use an indelible marker to identify the hoses on seed hose ports ④ 1 through 16. Disconnect the clamps and hoses.

Note: Further disassembly of the airbox is not recommended, as joints are sealed with silicone adhesive, and would need to be cleaned and resealed.

6. Inspect the agitation ports ②. Break up any build-up. Use a hooked tool or wire to pull smaller fragments down through the ports. For larger fragments, reach in through the inspection ports or vacuum them out via those ports.
7. Inspect the entire plenum area ③ for build-up. Break up any deposits. Vacuum them out through the inspection ports.
8. From the seed hose ports ④, inspect the seed air ports ⑤. Break up any deposits. Vacuum out from clean-out door.
9. With all ports and doors still open, operate the planter fan to blow up any remaining loose residues.
10. Reconnect the seed hoses. Reinstall the inspection port doors. Close the clean-out door.

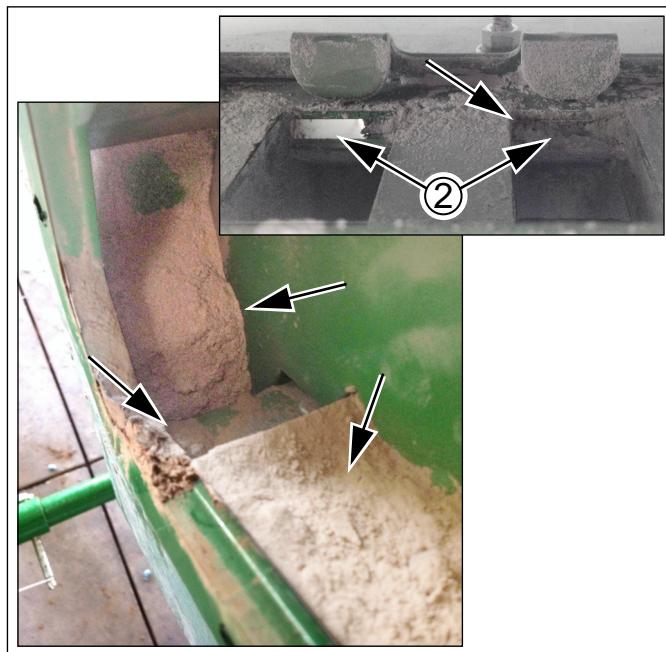


Figure 87
Residue in Air Box Plenum

36443
36442

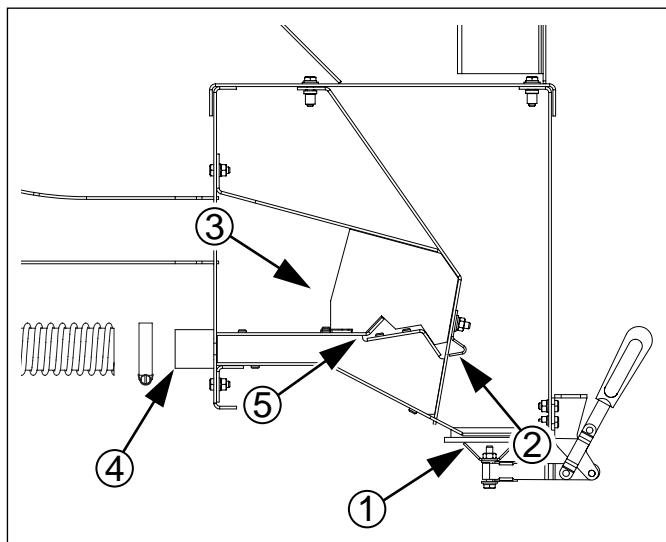


Figure 88
Airbox Section View LH

36441

Note: Flushing the airbox with water is not recommended. If done, operate the fan for an extended period to completely remove any moisture prior to storage or field operations.

Hydraulic Maintenance

As with any hydraulic system, contamination is the most common cause of performance problems and pre-mature wear. *Make a special effort to properly clean quick couplers prior to attaching the hoses to tractor, and never let them fall to the ground.*

Bleeding Marker Hydraulics

To fold properly, the marker hydraulics must be free of air. If the markers fold in jerky, uneven motions.

As the marker cylinders are encased within the main tool bar, it is not practical to bleed them at cylinder fittings. Remove air from the system by slowly cycling fold and unfold several times.

Drive-Line Shear Pin

Refer to Figure 89

The spiro pin ① that connects main transfer shaft collar ② to the transmission shears if an excessive load is put on the shaft.

Infrequent or improper lubrication causes binding of moving parts within the planter. This binding can cause the spiro pin to shear, preventing more serious damage to other planter parts.

NOTICE

Machine Damage / Nuisance Shear Risks:

Do not use arbitrary spiro pins. Replace sheared pins with cotter pins of the same size. Strong pins may fail to shear, causing more serious damage elsewhere. Weaker pins are prone to nuisance shears. Refer to current Parts Manual for correct spiro pin replacement part number.

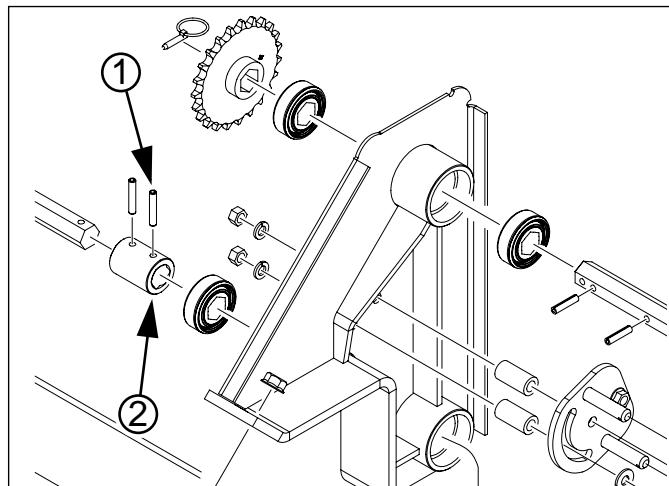


Figure 89
Transmission Shear Pin

29884

Marker Maintenance (Option)

See also:

"Initial Marker Setup (Option)" on page 114,
"Marker Operation (Option) S/N-" on page 33, and
"Marker Disk Adjustment" on page 42

Marker Shear Bolt Replacement

Refer to Figure 90

If a marker gets caught or hits an obstruction, it is designed to fail a shear bolt ③ at the fold, pivot on a second bolt (not visible in Figure), and swing back.

The shear bolt is a hex head cap screw, $\frac{5}{16}$ -18 \times 1 $\frac{1}{2}$ inch Grade 5, Great Plains part number 802-012C, plus a $\frac{5}{16}$ -18 lock nut, Great Plains part number 803-011C.

Note: If an exact replacement is not immediately available, temporarily substitute an M8 \times 1.25 Class 8.8 bolt and nut.

Install a replacement shear bolt on the vertical face on the side opposite from the pivot bolt. Do not use a higher grade bolt, or marker hang-ups may result in machine damage. Do not use a lower grade bolt, or you may experience nuisance shears.

Marker Grease Seal Cap

If grease seal cap for marker-disk-hub bearings is damaged or missing, disassemble and clean hub. Repack with grease and install new seal or grease cap.

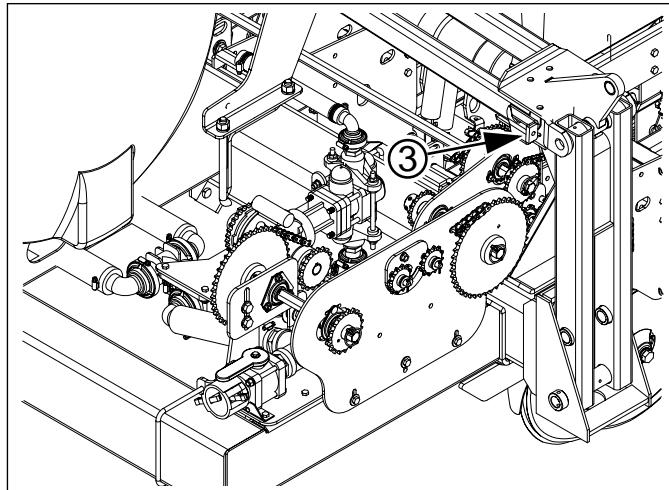


Figure 90
Marker Shear Bolt

29982

Chain Maintenance

Inspect and lubricate chains regularly. The slack of new chains tends to increase during the first few hours of operation due to seating.

See also “**Chain Routing**” on page 107.

Chain Slack

Check slack at fixed idlers within the first 8 hours of operation and tighten idlers as necessary. Check slack at spring-operated idlers seasonally.

Refer to Figure 91, which, for clarity, greatly exaggerates slack, and omits the idlers.

1. Measure the span ① for allowable slack:
Locate the longest span of each chain (usually the span which does not run through the idlers).
2. Determine the ideal slack:
Long chains (over 36 inch/91 cm): $\frac{1}{4}$ inch per foot
Vertical short chains: $\frac{1}{4}$ inch per foot (2.1 cm/m)
Horizontal short chains: $\frac{1}{2}$ inch per foot (4.2 cm/m).
3. Measure the current slack ②:
Acting at a right angle to the chain span at the center of the span, deflect the chain in both directions. The slack is the distance of the movement.
4. Adjust the idlers for ideal slack.

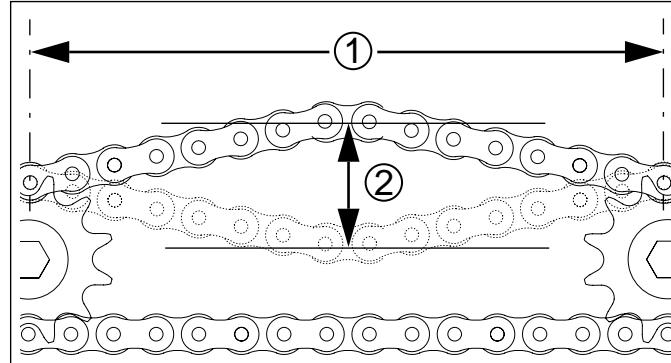


Figure 91
Measuring Chain Slack

27264

Chain Clips

Whenever mounting a chain, make sure the clip at the removable link is oriented to minimize snags.

Refer to Figure 92 (arrow shows chain direction)

Install clip with open end facing away from direction of chain travel (shown by gray or striped arrows in chain routing diagrams).

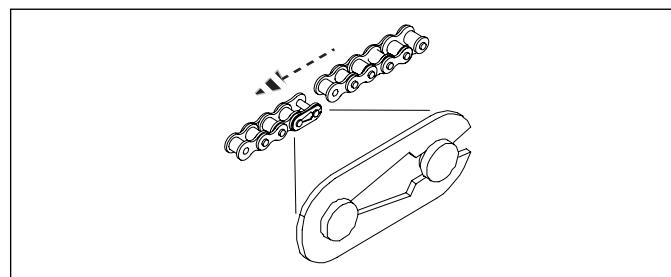


Figure 92
Chain Clip Orientation

Spreaders and Scrapers

Note: Applies to all row unit Series.

Refer to Figure 94

1. Remove side gauge wheels from arms to access row-unit disks and scrapers.
2. With the unit raised, check blade spreader ① for wear. Replace spreader if it is $\frac{1}{2}$ inch (13 mm) wide or narrower. To replace, remove disk blades ③, drive out roll pins ②, and install new spreader.
3. When reinstalling disk blades, put two shims ④ between bearing and shank on each blade. Tighten bolts.
4. Check amount of contact between blades, and adjust number of shims as needed. Store extra shims on outside of blade. See “**Opener Disc Contact Region**” on page 52.
5. Check that outside disk scrapers ⑤ are formed to disk blades to help remove any mud. Bend/twist scrapers to fit blades as needed. Every 200 acres of operation, check outside scrapers for adjustment and wear. Replace outside scrapers as necessary.

Row-Unit Side Wheels

Refer to Figure 95

1. **Lift opener side wheel off the ground.** Move tire in and out to check for end play. Check for roughness in bearing by rotating wheel. If bearings are rough, inspect and replace if necessary.
2. Side wheels are preset at the factory. Due to normal wear it may become necessary to make adjustments so the wheel remains close to the disk. To prevent plugging, loosen clamp bolt ① and slide arm inward to take up gap between side wheel and disk blade. If more adjustment is needed, go to step 3.
3. Remove bolt ② and wheel ③. Remove shims ④ from the inside of wheel ③ and place them on the outside of wheel. Always place removed shims from the inside to the outside. When installed, wheel should turn freely and not hit the arm at the curve. Do not add any more shims than necessary.
4. Disassemble side gauge wheel arm ⑤ from unit. Remove bushing ⑥ from sleeve ⑦ and check for wear. If necessary, replace bushing.
5. When reinstalling side gauge wheels, align tab on hex adjustment ⑧ with notch in bushing. Replace bolt and tighten.
6. Adjust side gauge wheels. Refer to see “**Side Gauge Wheel Adjustment**” on page 53.

Note: It is normal for the blade spreader to have some looseness in the holder and between the blades. Some looseness is required for proper operation.

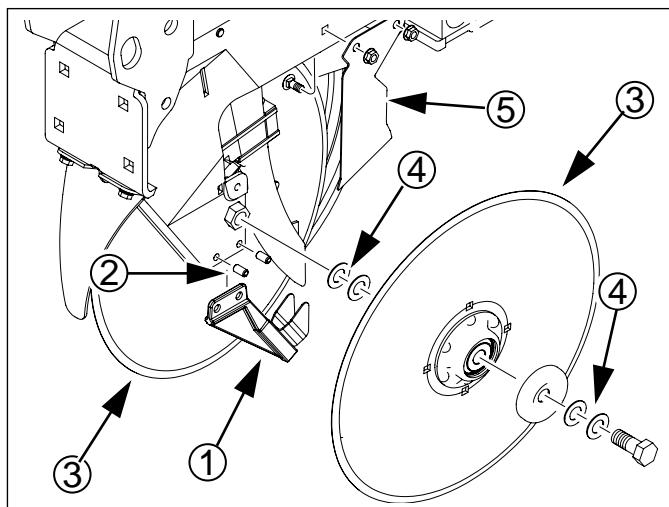


Figure 94: 25AP
Spreaders and Scrapers

22839

Note: You may need fewer washers under worn disks.

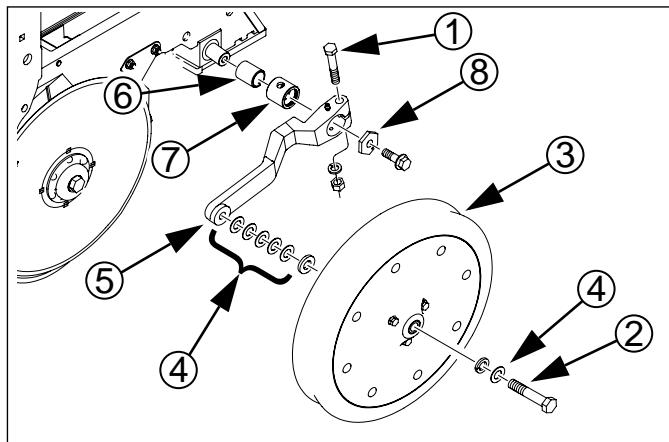


Figure 95
Side Gauge Wheel Shims

21894

CAUTION

Sharp Object Hazard:

Be careful when working in this area. Disk edges are sharp.

Seed Flap Replacement

Refer to Figure 96

To replace a seed flap ①, use a needle nose pliers or similar tool to grasp "T" top of flap. Pull upward to pull flap up out of metal bracket ②.

Push new seed flap ① down through metal bracket ② until flap snaps into place with "T" top resting on top of bracket.

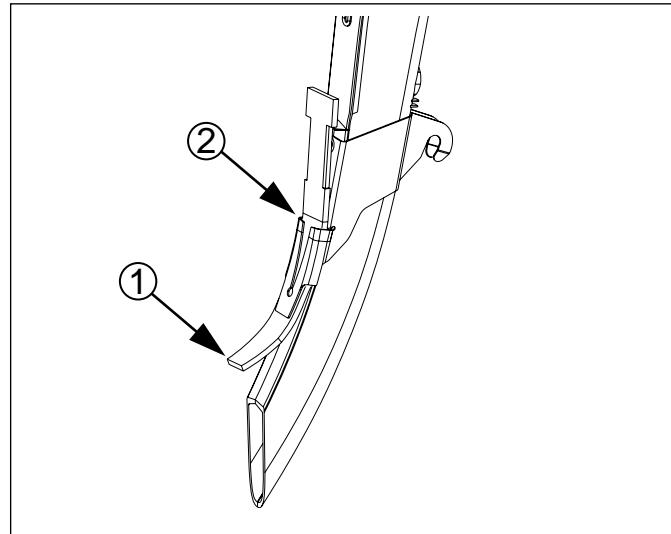
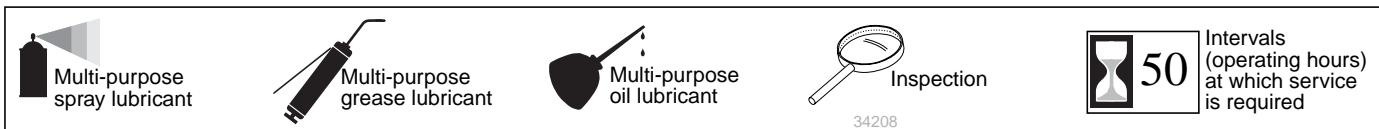


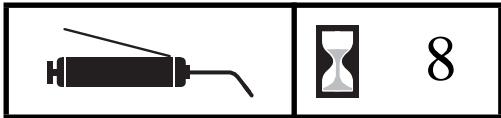
Figure 96
Seed Tube Flap

31047

Lubrication



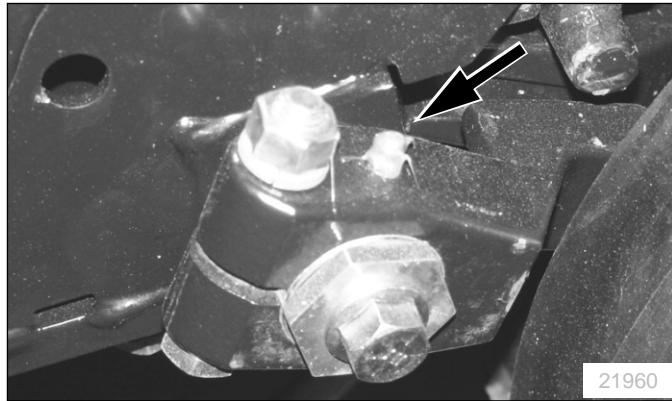
Opener Side Wheel Bushing



On both sides of each row-unit (2 per row)

Type of Lubrication: Grease

Quantity: Until grease emerges



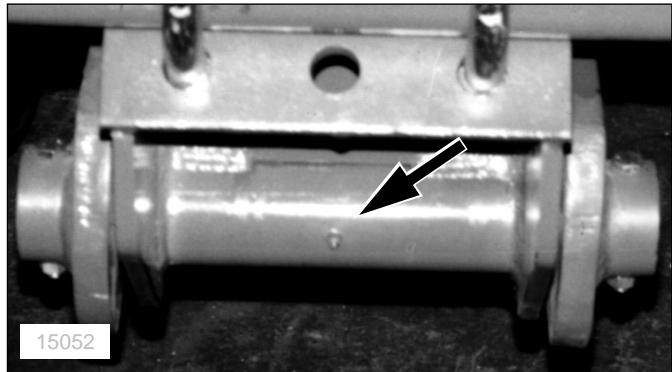
Gauge Wheel Module Forward Pivot



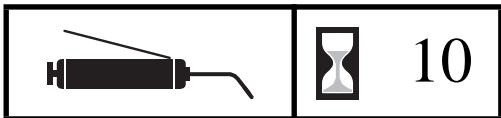
4 modules per planter,
one zerk per pivot;
4 total

Type of Lubrication: Grease

Quantity: Until grease emerges



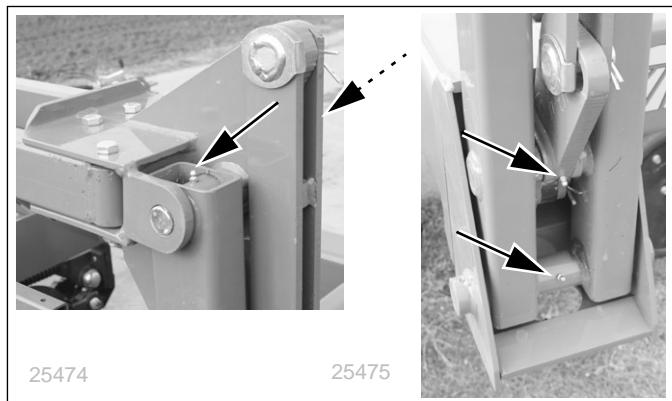
Markers (Option)



4 zerk per marker,
two markers;
8 total

Type of Lubrication: Grease

Quantity: Until grease emerges



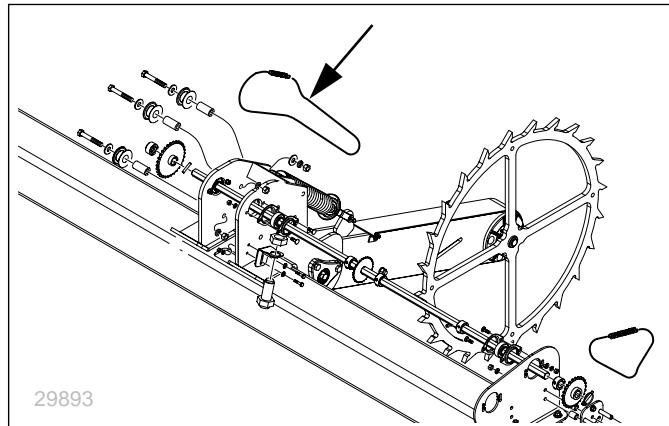
Chain: Contact Drive**As Required**

1 chain

Type of Lubrication: Chain Lube

Quantity = Coat thoroughly

Note: Lubricate chains any time there is a chance of moisture, and when being stored at the end of the planting season.

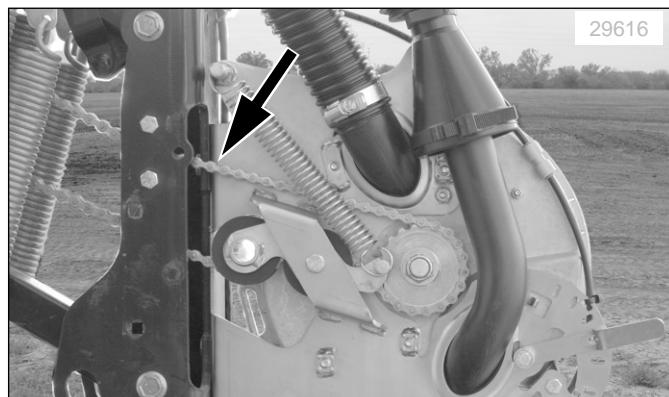
**Chains: Meter Drive****As Required**

1 chain each meter

Type of Lubrication: Chain Lube

Quantity = Coat thoroughly

Note: Lubricate chains any time there is a chance of moisture, and when being stored at the end of the planting season.

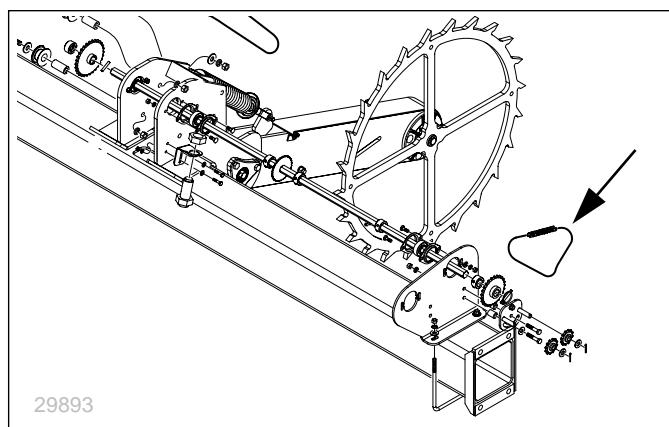
**Chain: Range Drive****As Required**

1 chain

Type of Lubrication: Chain Lube

Quantity = Coat thoroughly

Note: Lubricate chains any time there is a chance of moisture, and when being stored at the end of the planting season.



Chain: Transmission Drive

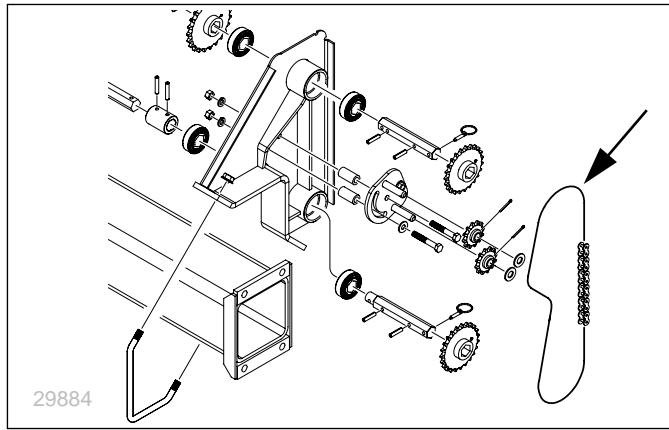


1 chain

Type of Lubrication: Chain Lube

Quantity = Coat thoroughly

Note: Lubricate chains any time there is a chance of moisture, and when being stored at the end of the planting season.



Ground Drive Wheel Hub

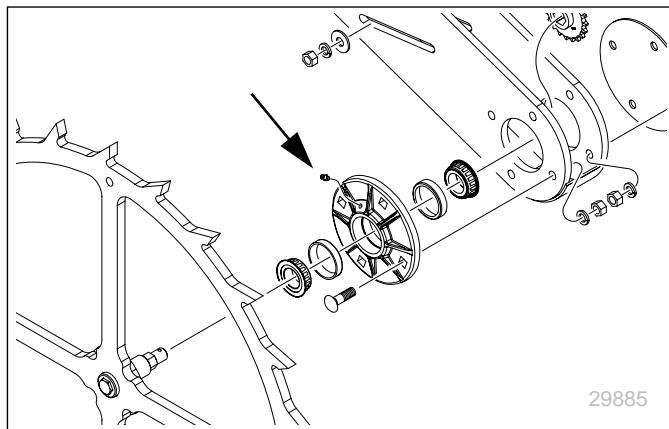


1 zerk at each bearing casting;
4 total

Type of Lubrication: Grease

Quantity: Until grease resistance felt

Re-pack seasonally.



Row Cleaner Bearings (Option)

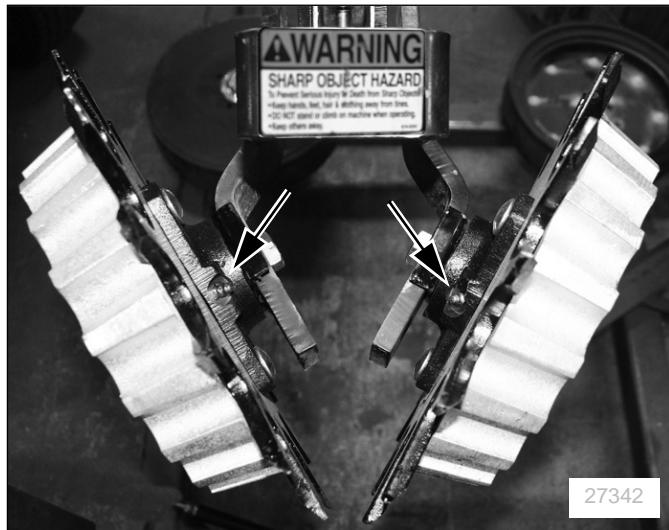


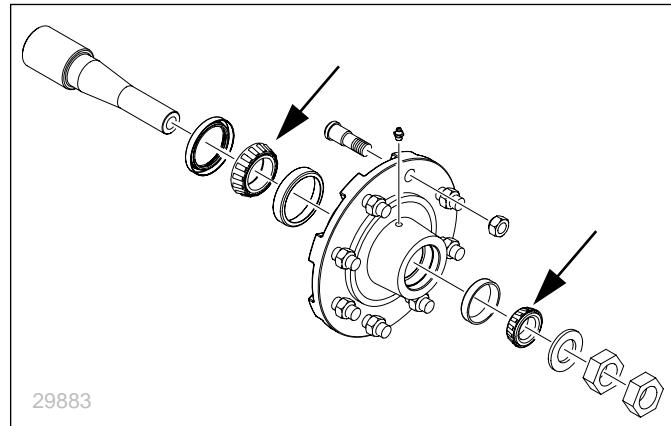
1 zerk each wheel, 1 or 2 wheels per row

Type of lubrication: Grease

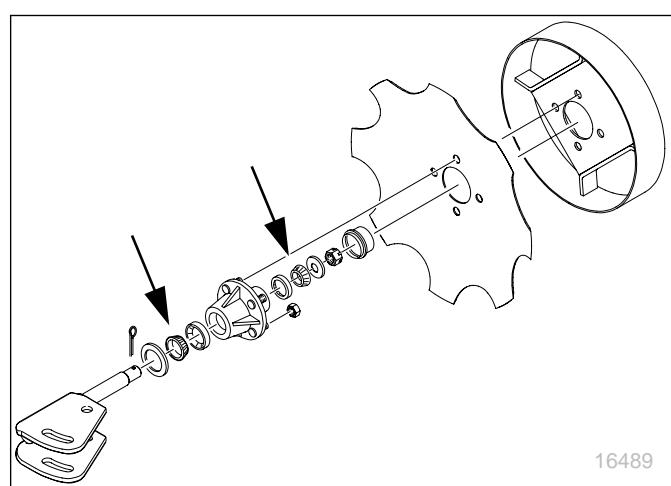
Quantity = Until resistance is felt

To avoid damaging the seal, do not add grease at high pressure.



Gauge Wheel Hubs**Seasonal**1 zerk each spindle;
4 totalType of Lubrication: Grease
Quantity: Until resistance is felt**Markers: Disk Hub****Seasonal**

4 bearings; 2 races each marker

Type of Lubrication: Grease
Quantity: Re-pack

Seed Lubricants

To maximize performance of Great Plains metering systems, it is imperative to use "Ezee Glide Plus" or Bayer Seed Fluency Agent.

Ezee Glide Plus Talc+Graphite Mix

821-069C bucket, 5 gallon (19 liter)

Ezee Glide Plus Lubricant

"Ezee Glide Plus" is suitable for all seeds, especially treated or inoculated seed, except where talc and graphite mixes are prohibited. *Thorough mixing of seed and added lubricant is required.*

Recommended usage:

For clean seeds other than milo, cotton, and sunflowers sprinkle one cup of Ezee Glide Plus Talc per 4 bushels or units (170 ml per 100 liters) of seed.

For milo, cotton, and sunflowers double the application to one cup (or more) per 2 bushels or units (335 ml per 100 liters) of seed.

For canola or mustard, 1 cup (240 ml) per 30 pound (13.6 kg) bag is a minimum starting value. Mix the seed lubricant early during the seed loading. Use more lubricant in extremely dry conditions.

Adjust this rate as necessary so all seeds become coated while avoiding an accumulation of lubricant in the bottom of the hopper.

For seed with excessive treatment, or for humid planting environments, increase the rate as needed for smooth meter operation.

CAUTION

Irritation and Chronic Exposure Hazard:

Wear gloves. DO NOT use hands or any part of your body to mix seed lubricant. Wear a respirator when transferring and mixing. Avoid breathing lubricant dust. Not an acute hazard. May cause mechanical eye or skin irritation in high concentrations. As with all mineral spills, minimize dusting during cleanup. Prolonged inhalation may cause lung injury. Product can become slippery when wet.



Bayer Seed Fluency Agent

821-074C Fluency Powder, case quantity

821-075C Fluency Powder, single 4.4 pound bucket

This agent is required by regulation for certain crops in certain regions (such as corn and soybean in Canada). It is an alternative to Ezee Glide Plus in other locales, for large seeds. It is not recommended for smaller seeds such as canola and milo.

Refer to the booklet affixed to the bucket for recommended usage. Do not exceed those recommendations, as excess amounts adversely affect accurate metering.

CAUTION

Dust and Explosion Hazard:

Avoid exposure to dust when mixing this powder into seed. Avoid creating dust in any confined space with ignition sources present, as specific concentrations can be explosive. Consult the instruction booklet and SDS^a for further cautions.

a. SDS: Safety Data Sheet, formerly Material Safety Data Sheet (MSDS).



Options

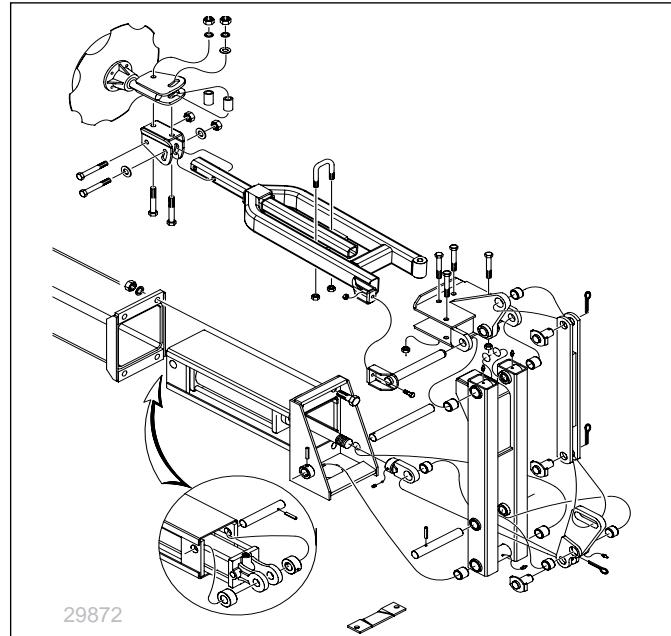
Dual Sequenced Markers

A marker system includes hydraulic cylinder, marker arm and mount for left and right side, plus an automatic sequence valve that controls which side activates, and at what speed. The marker system requires one tractor remote.

The system is factory installed, but ordered as a separate line item.

Description	Order Number
4-30 PT PLTR FLAT FOLD MKR	113-837A
6-30 PT PLTR FLAT FOLD MKR	113-838A
8-30 PT PLTR FLAT FOLD MKR	113-839A

See "Marker Operation (Option) S/N-" on page 33.



Seed Lubricant

Description	Order Number
Ezee Glide Plus Talc + Graphite Mix (5 gallon / 18.9 liter container)	821-069C

See "Loading Seed (1 bu.hoppers)" on page 24.
See "Bayer Seed Fluency Agent" on page 90.

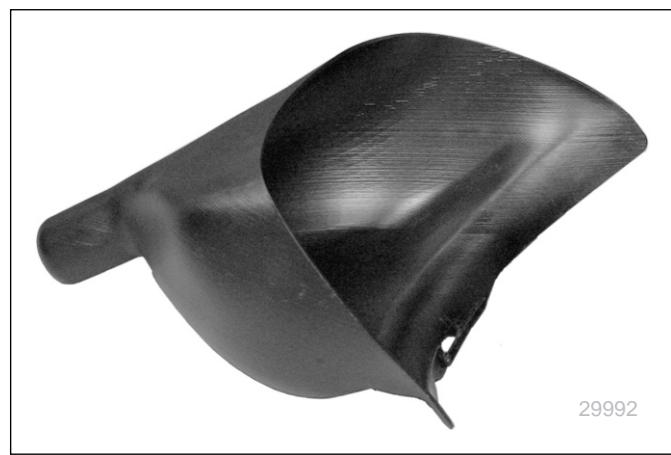


Clean-Out Container

One container is provided with the planter. Order the following part for additional or replacement containers.

Description	Order Number
AIR METER CLEAN OUT FUNNEL	817-811C

See "Funnel Conversion" on page 75.
See "Meter Clean-Out" on page 76.



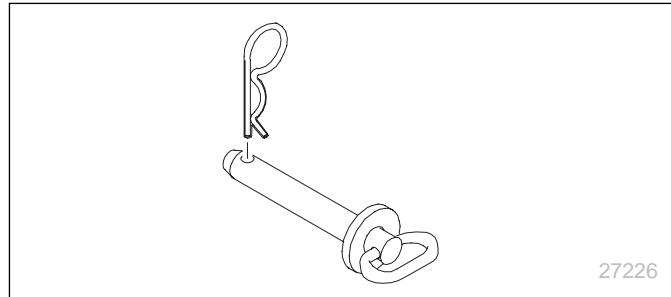
Row-Mounted Accessories

Lock-Up Pins

If rows are shut off, you can reduce unnecessary wear on the unused row units by locking them up. Twin-row planters include, as standard, one lock-pin per rear row. For replacement pins, or for other planter models, order one per row unit locked-up.

Description	Part Number
PIN HITCH 1 X 6 W/HAIRPIN	805-033C

See "Row Unit Shut-Off" on page 58.



Rigid Row Cleaners

Optional Martin row cleaners are unit-mounted, either:

- "stand-alone", using a unit-mount assembly (①), or;
- added to a UMC coulter disk mounting bracket (②, with or without a disk).

Twin-Row planters and narrow row spacings support only single-wheel unit-mounted row cleaners, in alternating left/right cleaner hub orientations.

Coulter-mounted (requires coulter):

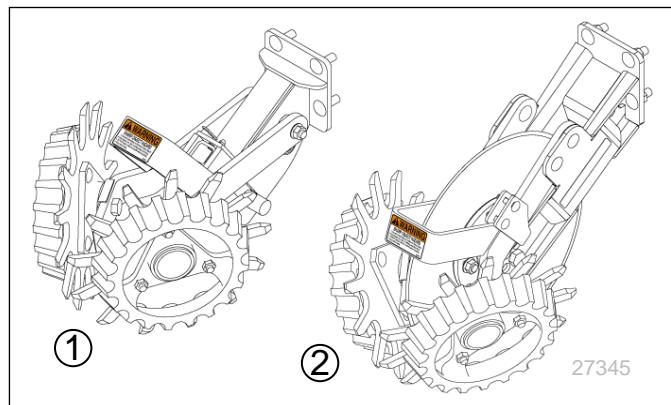
Coulter-Mount RC Kits	Part Number
Single, 2 left, 2 right (4 row)	207-223A
Single, 4 left, 4 right (8 row, 4 twin)	207-205A
Single, 3 left, 3 right (6 row)	207-227A
Single, 6 left, 6 right (12 row, 6 twin)	207-228A
Single, 8 left, 8 right (16 row, 8 twin)	207-212A
Double, 4 row	207-225A
Double, 6 row	207-231A
Double, 8 row	207-233A

Stand-alone (includes mount):

Stand-Alone RC Kits	Order Number
Single, 2 left, 2 right (4 row)	207-222A
Single, 4 left, 4 right (8 row, 4 twin)	207-224A
Single, 3 left, 3 right (6 row)	207-229A
Single, 6 left, 6 right (12 row, 6 twin)	207-230A
Double, 4 row	207-226A
Double, 6 row	207-232A
Double, 8 row	207-234A

For operations, see:

"Unit-Mount Cleaner Adjustments" on page 49.



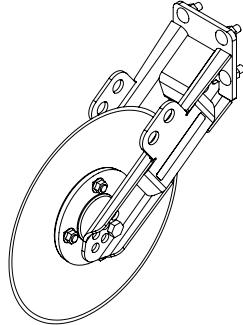
207-21xK and 207-09xS kits do not include a manual.

Individual Row Cleaners	Part Number
UMRC Dual Wheel	207-213K
UMRC LH Single Wheel	207-215K
UMRC RH Single Wheel	207-216K
UMC-RC Dual Wheel	207-098S
UMC-RC LH Single Wheel	207-092S
UMC-RC RH Single Wheel	207-093S
RC Install/Use/Parts Manual	204-085M-A

Unit-Mounted Disk Coulters

Optional unit-mount disk coulters are available with 15 inch fluted or 15 inch turbo blades. For complete coulters, with unit mount and blade the selection includes:

Description	Part Number
4 mounts, 15 inch fluted (4 row)	204-171A
4 mounts, 15 inch turbo (4 row)	204-173A
6 mounts, 15 inch fluted (6 row)	204-175A
6 mounts, 15 inch turbo (6 row)	204-176A
8 mounts, 15 inch fluted (8 row, 4 twin)	204-172A
8 mounts, 15 inch turbo (8 row, 4 twin)	204-174A
12 mounts, 15 inch fluted (6 twin)	204-552A
12 mounts, 15 inch turbo (8 twin)	204-553A
16 mounts, 15 inch fluted (8 twin)	204-551A
16 mounts, 15 inch turbo (8 twin)	204-554A



29124



25299

Coulter Blades

Replacement/alternate blades include (one per row):

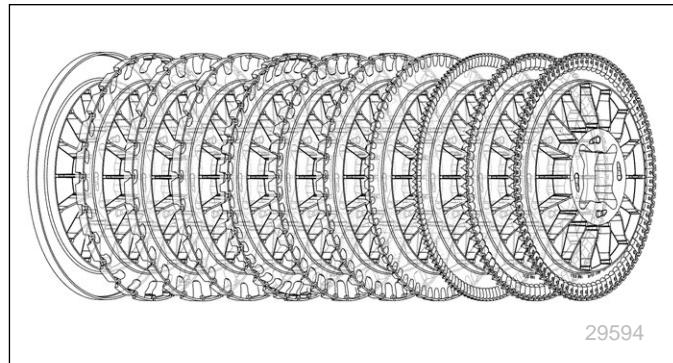
15 inch Turbo Packages	Part Number
Fluted, 15 inch (50 flutes)	820-331C
Turbo, 15 inch (20 flutes)	820-327C
Straight, 14 inch	820-259C

See “UMC Coulter Adjustments” on page 50.

Seed Meter Disks

Air-Pro® meters accept a variety of seed disks, plus a special blank disk for row shut-off. Choices include:

Meter Disks	Part No.
Corn, 024 Cell (Large, Flat)	817-836C
Corn, 024 Cell (Large, Round)	817-794C
Corn, 024 Cell (Small, Round or Flat)	817-795C
Corn, 040 Cell (Large, Flat)	817-838C
Corn, 040 Cell (Large, Round)	817-796C
Corn, 040 Cell (Small, Round or Flat)	817-797C
Cotton, 060 Cell	817-857C
Milo, 065 Cell	817-849C
Milo, 130 Cell	817-800C
Soybeans, 084 Cell	817-798C
Soybeans, 168 Cell	403-551D
Sunflower, 024 Cell	817-851C
Volumetric No. 1, 84 Cell	817-867C



Inside Disk Scrapers

When planting in moist or sticky soils, these scrapers are useful in preventing build-up that might otherwise impair opener disc performance.

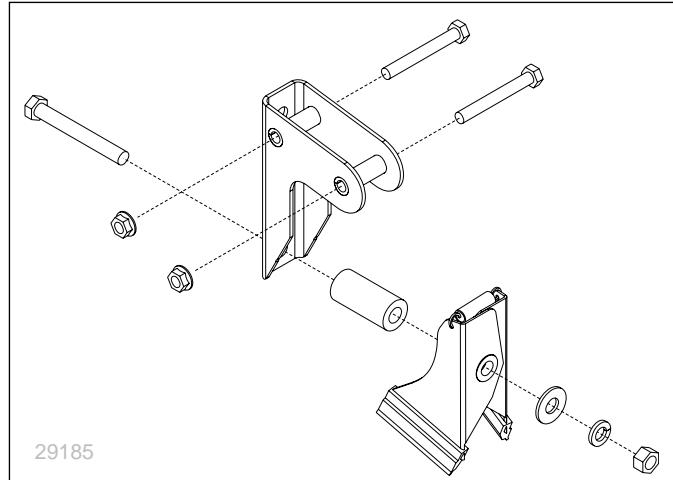
Description	Part Number
Inside Scraper	122-278S

This scraper cannot be used with Seed-Lok® seed firmers installed. It is compatible with seed flaps and optional Keeton seed firmers.

See page 117 for scraper installation. The spring-loaded carbide scraper requires no adjustment.

Meter Disk	Part Number
Blank, 000 Cell	817-841C

See "Seed Meter Setup and Adjustment" on page 55.



Gauge Wheel Scrapers

When planting in moist or sticky soils, these scrapers are useful in preventing build-up that might otherwise result in shallow planting.

Order one part per wheel (2 per opener).

Wheel Scrapers	Part Number
2½ inch (6.4 cm) scraper	404-194D
3 inch (7.6 cm) scraper	404-195D
4 inch (10.2 cm) scraper	404-196D

The scrapers mount on the bottom rear of the depth wheel arm, using existing hardware. The slot in the scraper is long enough to clear the lower grease zerk, and allow adjustment as wheel and scraper wear.



For operations, see:

"Adjusting Gauge Wheel Scrapers" on page 54.

Seed Firmers

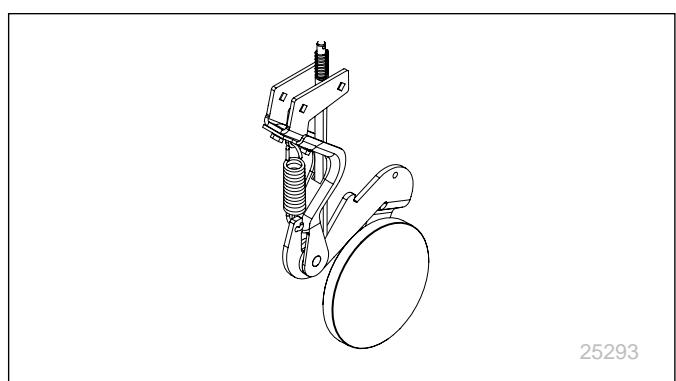
The base YP425A3P, YP625A3P & YP825A3P planter requires a choice of row unit bundles which include one of three firmers: seed flap, Keeton®, or Seed-Lok®. Only one type of seed firmer may be installed at the same time. Order one per row.

Seed-Lok® Seed Firmer

Description	Part Number
25 Series Seed-Lok® kit (per opener)	404-093K

For operations, see:

"Seed Firmer Adjustments" on page 61.



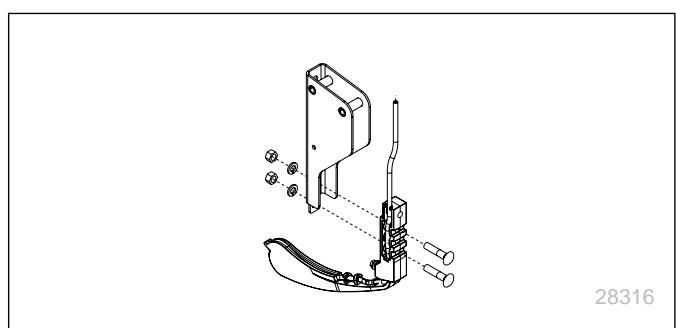
Keeton® Seed Firmer

The Keeton® seed firmer supports low-rate fertilizer delivery. For this use, a user-provisioned liquid fertilizer system must be installed.

Description	Part Number
Keeton seed firmer (per opener)	890-840C

For operations, see:

"Seed Firmer Adjustments" on page 61.



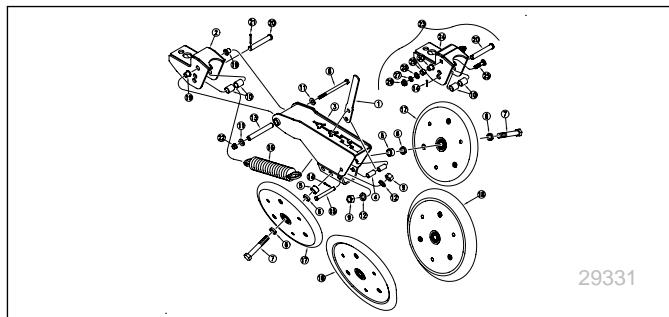
Row Unit Press Wheels

The base Yield Pro planter includes a choice of press wheels. Additional wheels are available, and all may be field-installed.

This manual does not list kit part numbers as the available wheels are often region-specific. Consult your Great Plains dealer.

For operations, see:

"Press Wheel Adjustment" on page 62.





Appendix A - Reference Information

Specifications and Capacities

YP425A3P Single-Row Data

Model	YP425A3P -0470	YP425A3P -0430	YP425A3P -0436	YP425A3P -0438	YP425A3P -0440				
Row Count	4								
Row Spacing	70.0 cm	30 inches	36 inches	38 inches	40 inches				
Width, no Markers	306.1 cm	10 ft. 0.5 in.		15 ft. 0.5 in.					
Width, with Markers	342.9 cm	11 ft. 3 in.		16 ft. 3 in.					
Span (between end rows)	210 cm	90 inches	108 inches	114 inches	120 inches				
Swath (Channel Width)	280.0 cm	120.0 inches	144.0 inches	152.0 inches	160.0 inches				
Seed Monitor	Seed Monitor, monitoring*: Seed Tubes (all), Ground Speed								
Seed Capacity (B1014R+)	226 litres	6.4 bushels							
Seed Capacity (B1013R-)	169 litres	4.8 bushels							
Length	177.8 cm	5 ft. 10 in.							
Working Height	147.3 cm	4 ft. 10 in.							
Transport Height	6 feet 6 inches (198 cm) (at 14 in. ground clearance)								
Transport Clearance	Depends on Tractor Hitch								
Min. Tractor HP Req.¹	65 - 70 kW	85 - 90 hp	80 - 90 hp	80 - 90 hp	85 - 95 hp				
Hitch	Three-Point								
Hydraulic Circuits Req.	1 or 2 Remotes, Closed-Center, 2250 psi, 10 gal/min (155 bar, 38 liters/min)								
Weight (empty, base)²	1500 kg	3300 lbs.	3000 lbs.	3000 lbs.	3600 lbs.				
Weight (maximum, full)³	2100 kg	4500 lbs.	4200 lbs.	4200 lbs.	4800 lbs.				
Gauge Wheel Tire Size	8R19.5 LT								
Opener Down Pressure	140 to 250 kg	305 to 545 pounds							
Opener Travel (Up - Down)	25.4 cm	10 inches							
Opener Depth Range	0 to 8.9 cm	0 to 3.5 inches							

1. Power requirements vary significantly with conditions and practices.

2. No fertilizer, markers, coulters, row cleaners or materials loaded.

3. Weight can vary by thousands of pounds depending on options installed. See **Transport** topic.

* Planter functions not monitored include: fan rpm, hopper level, implement lift, manifold pressures

YP425A3P Twin-Row Data

Model	YP425A3P -08TR	YP425A3P -0836	YP425A3P -0838	YP425A3P -0840
Row Count	8 (4 twin)			
Row Spacing	30 in.	36 in.	38 in.	40 in.
Width, no Markers	10 ft. 0.5 in.			
Width, with Markers	11 ft. 3 in.			
Span (between end rows)	90 inches	108 inches	114 inches	120 inches
Swath (Channel Width)	120.0 inches	144.0 inches	152.0 inches	160.0 inches
Seed Monitor	Seed Monitor, monitoring*: Seed Tubes (all), Ground Speed			
Seed Capacity (B1014R+)	12.8 bushels			
Seed Capacity (B1013R-)	9.6 bushels			
Length	5 ft. 10 in.			
Working Height	4 ft. 10 in.			
Transport Height	6 feet 6 inches (198 cm) (at 14 in. ground clearance)			
Transport Clearance	Depends on Tractor Hitch			
Min. Tractor HP Req.¹	115 - 125 hp	115 - 125 hp	115 - 125 hp	115 - 125 hp
Hitch	Three-Point			
Hydraulic Circuits Req.	1 or 2 Remotes, Closed-Center, 2250 psi, 10 gal/min (155 bar, 38 liters/min)			
Weight (empty, base)²	4600 lbs.	4800 lbs.	4800 lbs.	4800 lbs.
Weight (maximum, full)³	6500 lbs.	6700 lbs.	6700 lbs.	6700 lbs.
Gauge Wheel Tire Size	8R19.5 LT			
Opener Down Pressure	305 to 545 pounds			
Opener Travel (Up - Down)	10 inches			
Opener Depth Range	0 to 3.5 inches			

1. Power requirements vary significantly with conditions and practices.

2. No fertilizer, markers, coulters, row cleaners or materials loaded.

3. Weight can vary by thousands of pounds depending on options installed. See Transport topic.

* Planter functions not monitored include: fan rpm, hopper level, implement lift, manifold pressures

YP625A3P Single-Row Data

Model	YP625A3P -0670	YP625A3P -0630	YP625A3P -0636	YP625A3P -0638	YP625A3P -0640				
Row Count	6								
Row Spacing	70.0 cm	30 inches	36 inches	38 inches	40 inches				
Width, no Markers	458.5 cm	15 ft. 0.5 in.		20 ft. 0.5 in.					
Width, with Markers	495.3 cm	16 ft. 3 in.		21 ft. 3 in.					
Span (between end rows)	350.0 cm	150 inches	180 inches	190 inches	200 inches				
Swath (Channel Width)	420.0 cm	180.0 inches	216.0 inches	228.0 inches	240.0 inches				
Seed Monitor	Seed Monitor, monitoring*: Seed Tubes (all), Ground Speed								
Seed Capacity (B1014R+)	338 litres	9.6 bushels							
Seed Capacity (B1013R-)	254 litres	7.2 bushels							
Length	177.8 cm	5 ft. 10 in.							
Working Height	147.3 cm	4 ft. 10 in.							
Transport Height	6 feet 6 inches (198 cm) (at 14 in. ground clearance)								
Transport Clearance	Depends on Tractor Hitch								
Min. Tractor HP Req.¹	75 - 85 kW	100 - 110 hp							
Hitch	Three-Point								
Hydraulic Circuits Req.	1 or 2 Remotes, Closed-Center, 2250 psi, 10 gal/min (155 bar, 38 liters/min)								
Weight (empty, base)²	2000 kg	4300 lbs.	4200 lbs.	4200 lbs.	4200 lbs.				
Weight (maximum, full)³	2700 kg	5900 lbs.	5800 lbs.	5800 lbs.	5800 lbs.				
Gauge Wheel Tire Size	8R19.5 LT								
Opener Down Pressure	140 to 250 kg	305 to 545 pounds							
Opener Travel (Up - Down)	25.4 cm	10 inches							
Opener Depth Range	0 to 8.9 cm	0 to 3.5 inches							

1. Power requirements vary significantly with conditions and practices.

2. No fertilizer, markers, coulters, row cleaners or materials loaded.

3. Weight can vary by thousands of pounds depending on options installed. See Transport topic.

* Planter functions not monitored include: fan rpm, hopper level, implement lift, manifold pressures

YP625A3P Twin-Row Data

Model	YP625A3P -12TR	YP625A3P -1236	YP625A3P -1238	YP625A3P -1240
Row Count	12 (6 twin)			
Row Spacing	30 inches	36 inches	38 inches	40 inches
Width, no Markers	15 ft. 0.5 in.			
Width, with Markers	16 ft. 3 in.			
Span (between end rows)	150 inches	180 inches	190 inches	200 inches
Swath (Channel Width)	180.0 inches	216.0 inches	228.0 inches	240.0 inches
Seed Monitor	Seed Monitor, monitoring*: Seed Tubes (all), Ground Speed			
Seed Capacity (B1014R+)	19.2 bushels			
Seed Capacity (B1013R-)	14.4 bushels			
Length	5 ft. 10 in.			
Working Height	4 ft. 10 in.			
Transport Height	6 feet 6 inches (198 cm) (at 14 in. ground clearance)			
Transport Clearance	Depends on Tractor Hitch			
Min. Tractor HP Req.¹	145 - 160 hp	145 - 155 hp	145 - 155 hp	145 - 155 hp
Hitch	Three-Point			
Hydraulic Circuits Req.	1 or 2 Remotes, Closed-Center, 2250 psi, 10 gal/min (155 bar, 38 liters/min)			
Weight (empty, base)²	6200 lbs.	6100 lbs.	6100 lbs.	6100 lbs.
Weight (maximum, full)³	8700 lbs.	8700 lbs.	8700 lbs.	8700 lbs.
Gauge Wheel Tire Size	8R19.5 LT			
Opener Down Pressure	305 to 545 pounds			
Opener Travel (Up - Down)	10 inches			
Opener Depth Range	0 to 3.5 inches			

1. Power requirements vary significantly with conditions and practices.

2. No fertilizer, markers, coulters, row cleaners or materials loaded.

3. Weight can vary by thousands of pounds depending on options installed. See Transport topic.

* Planter functions not monitored include: fan rpm, hopper level, implement lift, manifold pressures

YP825A3P Single-Row Data

Model	YP825A3P -0870	YP825A3P -0830	YP825A3P -0836	YP825A3P -0838	YP825A3P -0840	
Row Count	8					
Row Spacing	70.0 cm	30 inches	36 inches	38 inches	40 inches	
Width, no Markers	610.9 cm					
Width, with Markers	20 ft. 0.5 in.					
Span (between end rows)	21 ft. 3 in.	25 ft. 10.5 in.				
Span (between end rows)	490.0 cm	210 inches	252 inches	266 inches	280 inches	
Swath (Channel Width)	560.0 cm	240.0 inches	288.0 inches	304.0 inches	320.0 inches	
Seed Monitor	Seed Monitor, monitoring*: Seed Tubes (all), Ground Speed					
Seed Capacity (B1014R+)	451 litres	12.8 bushels				
Seed Capacity (B1013R-)	338 litres	9.6 bushels				
Length	177.8 cm	5 ft. 10 in.				
Working Height	147.3 cm	4 ft. 10 in.				
Transport Height	6 feet 6 inches (198 cm) (at 14 in. ground clearance)					
Transport Clearance	Depends on Tractor Hitch					
Min. Tractor HP Req.¹	85 - 95 kW	115 - 130 hp	120 - 130 hp	120 - 130 hp	120 - 130 hp	
Hitch	Three-Point					
Hydraulic Circuits Req.	1 or 2 Remotes, Closed-Center, 2250 psi, 10 gal/min (155 bar, 38 liters/min)					
Weight (empty, base)²	2300 kg	5000 lbs.	5500 lbs.	5500 lbs.	5500 lbs.	
Weight (maximum, full)³	3100 kg	6900 lbs.	7500 lbs.	7500 lbs.	7500 lbs.	
Gauge Wheel Tire Size	8R19.5 LT					
Opener Down Pressure	140 to 250 kg	305 to 545 pounds				
Opener Travel (Up - Down)	25.4 cm	10 inches				
Opener Depth Range	0 to 8.9 cm	0 to 3.5 inches				

1. Power requirements vary significantly with conditions and practices.

2. No fertilizer, markers, coulters, row cleaners or materials loaded.

3. Weight can vary by thousands of pounds depending on options installed. See Transport topic.

* Planter functions not monitored include: fan rpm, hopper level, implement lift, manifold pressures

YP825A3P Twin-Row Data

Model	YP825A3P -16TR	YP825A3P -1636	YP825A3P -1638	YP825A3P -1640
Row Count	16 (8 twin)			
Row Spacing	30 inches	36 inches	38 inches	40 inches
Width, no Markers	20 ft. 0.5 in.			
Width, with Markers	21 ft. 3 in.			
Span (between end rows)	210 inches	252 inches	266 inches	280 inches
Swath (Channel Width)	240.0 inches	288.0 inches	304.0 inches	320.0 inches
Seed Monitor	Seed Monitor, monitoring*: Seed Tubes (all), Ground Speed			
Seed Capacity (B1014R+)	25.6 bushels			
Seed Capacity (B1013R-)	19.2 bushels			
Length	5 ft. 10 in.			
Working Height	4 ft. 10 in.			
Transport Height	6 feet 6 inches (198 cm) (at 14 in. ground clearance)			
Transport Clearance	Depends on Tractor Hitch			
Min. Tractor HP Req.¹	175 - 190 hp	180 - 195 hp	180 - 195 hp	180 - 195 hp
Hitch	Three-Point			
Hydraulic Circuits Req.	1 or 2 Remotes, Closed-Center, 2250 psi, 10 gal/min (155 bar, 38 liters/min)			
Weight (empty, base)²	7400 lbs.	8000 lbs.	8000 lbs.	8000 lbs.
Weight (maximum, full)³	10700 lbs.	11300 lbs.	11300 lbs.	11300 lbs.
Gauge Wheel Tire Size	8R19.5 LT			
Opener Down Pressure	305 to 545 pounds			
Opener Travel (Up - Down)	10 inches			
Opener Depth Range	0 to 3.5 inches			

1. Power requirements vary significantly with conditions and practices.

2. No fertilizer, markers, coulters, row cleaners or materials loaded.

3. Weight can vary by thousands of pounds depending on options installed. See Transport topic.

* Planter functions not monitored include: fan rpm, hopper level, implement lift, manifold pressures

Torque Values Chart

Bolt Size	Bolt Head Identification			Bolt Size	Bolt Head Identification								
in-tpi ^a	N-m ^b	ft-lb ^d	N-m	ft-lb	N-m	ft-lb	N-m	ft-lb					
1/4-20	7.4	5.6	11	8	16	12	M 5 X 0.8	4	3	6	5	9	7
1/4-28	8.5	6	13	10	18	14	M 6 X 1	7	5	11	8	15	11
5/16-18	15	11	24	17	33	25	M 8 X 1.25	17	12	26	19	36	27
5/16-24	17	13	26	19	37	27	M 8 X 1	18	13	28	21	39	29
3/8-16	27	20	42	31	59	44	M 10 X 1.5	33	24	52	39	72	53
3/8-24	31	22	47	35	67	49	M 10 X 0.75	39	29	61	45	85	62
7/16-14	43	32	67	49	95	70	M 12 X 1.75	58	42	91	67	125	93
7/16-20	49	36	75	55	105	78	M 12 X 1.5	60	44	95	70	130	97
1/2-13	66	49	105	76	145	105	M 12 X 1	90	66	105	77	145	105
1/2-20	75	55	115	85	165	120	M 14 X 2	92	68	145	105	200	150
9/16-12	95	70	150	110	210	155	M 14 X 1.5	99	73	155	115	215	160
9/16-18	105	79	165	120	235	170	M 16 X 2	145	105	225	165	315	230
5/8-11	130	97	205	150	285	210	M 16 X 1.5	155	115	240	180	335	245
5/8-18	150	110	230	170	325	240	M 18 X 2.5	195	145	310	230	405	300
3/4-10	235	170	360	265	510	375	M 18 X 1.5	220	165	350	260	485	355
3/4-16	260	190	405	295	570	420	M 20 X 2.5	280	205	440	325	610	450
7/8-9	225	165	585	430	820	605	M 20 X 1.5	310	230	650	480	900	665
7/8-14	250	185	640	475	905	670	M 24 X 3	480	355	760	560	1050	780
1-8	340	250	875	645	1230	910	M 24 X 2	525	390	830	610	1150	845
1-12	370	275	955	705	1350	995	M 30 X 3.5	960	705	1510	1120	2100	1550
1 1/8-7	480	355	1080	795	1750	1290	M 30 X 2	1060	785	1680	1240	2320	1710
1 1/8-12	540	395	1210	890	1960	1440	M 36 X 3.5	1730	1270	2650	1950	3660	2700
1 1/4-7	680	500	1520	1120	2460	1820	M 36 X 2	1880	1380	2960	2190	4100	3220
1 1/4-12	750	555	1680	1240	2730	2010							
1 3/8-6	890	655	1990	1470	3230	2380							
1 3/8-12	1010	745	2270	1670	3680	2710							
1 1/2-6	1180	870	2640	1950	4290	3160							
1 1/2-12	1330	980	2970	2190	4820	3560							

Torque tolerance + 0%, -15% of torquing values. Unless otherwise specified use torque values listed above.

25199

Tire Inflation Chart

Wheel	Tire Size	Inflation
Transport/ Gauge	8R19.5 LT	110 psi (760 kPa)

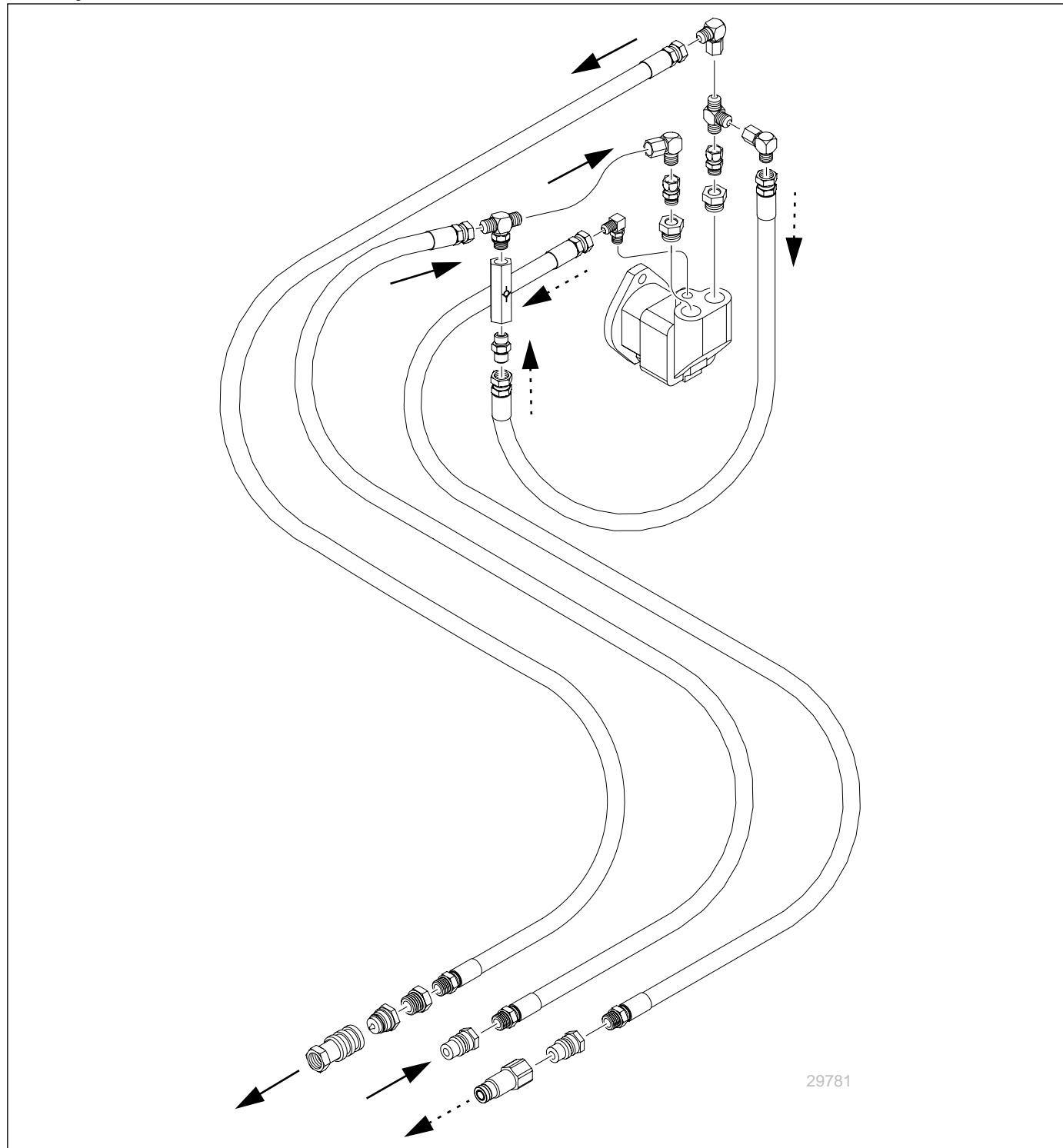
Tire Warranty Information

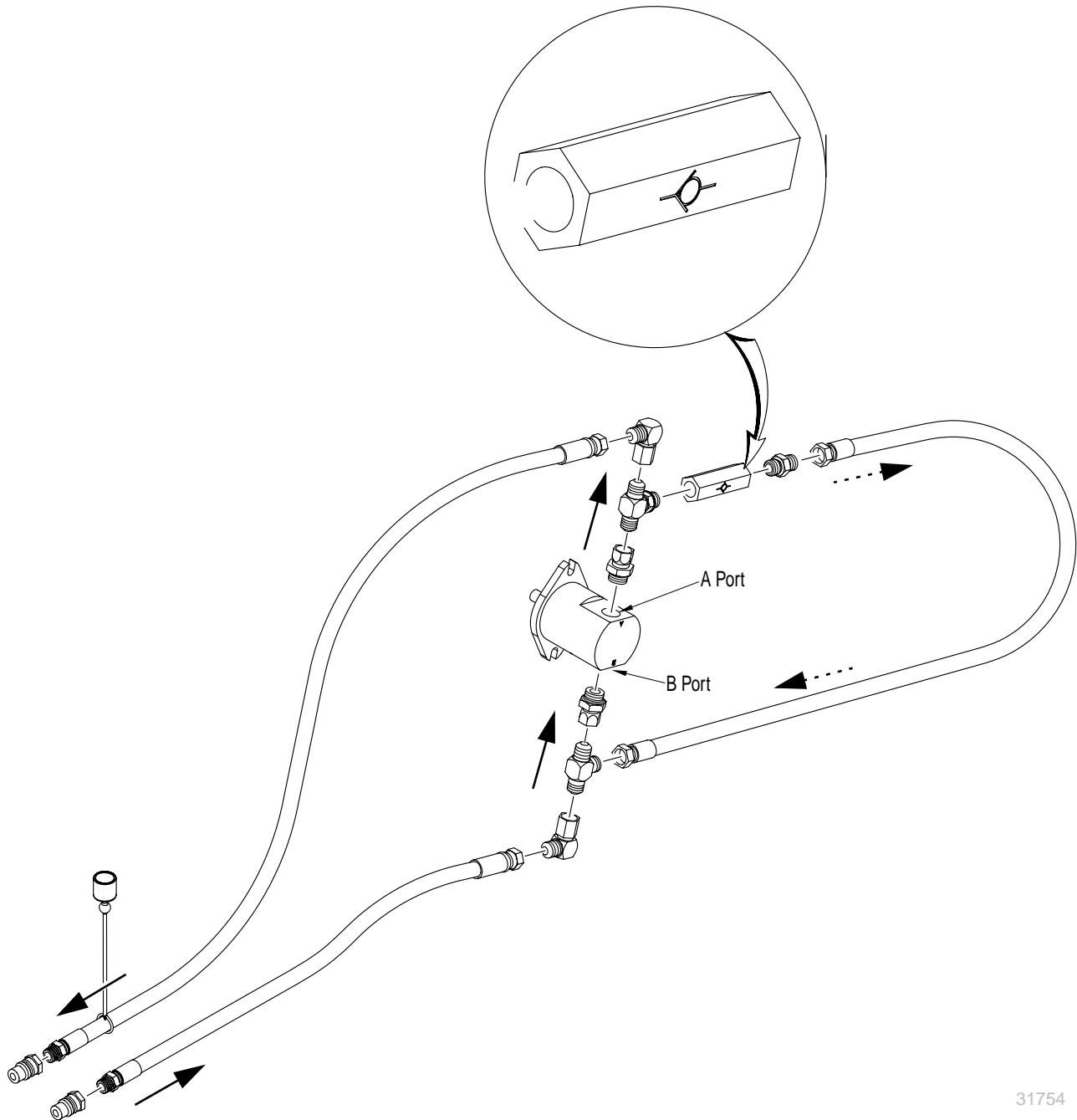
All tires are warranted by the original manufacturer of the tire. Tire warranty information is found in the brochures included with your Operator's and Parts Manuals or online at the manufacturer's web sites listed below. For assistance or information, contact your nearest Authorized Farm Tire Retailer.

Manufacturer	Web site
Firestone	www.firestoneag.com
Gleason	www.gleasonwheel.com
Titan	www.titan-intl.com

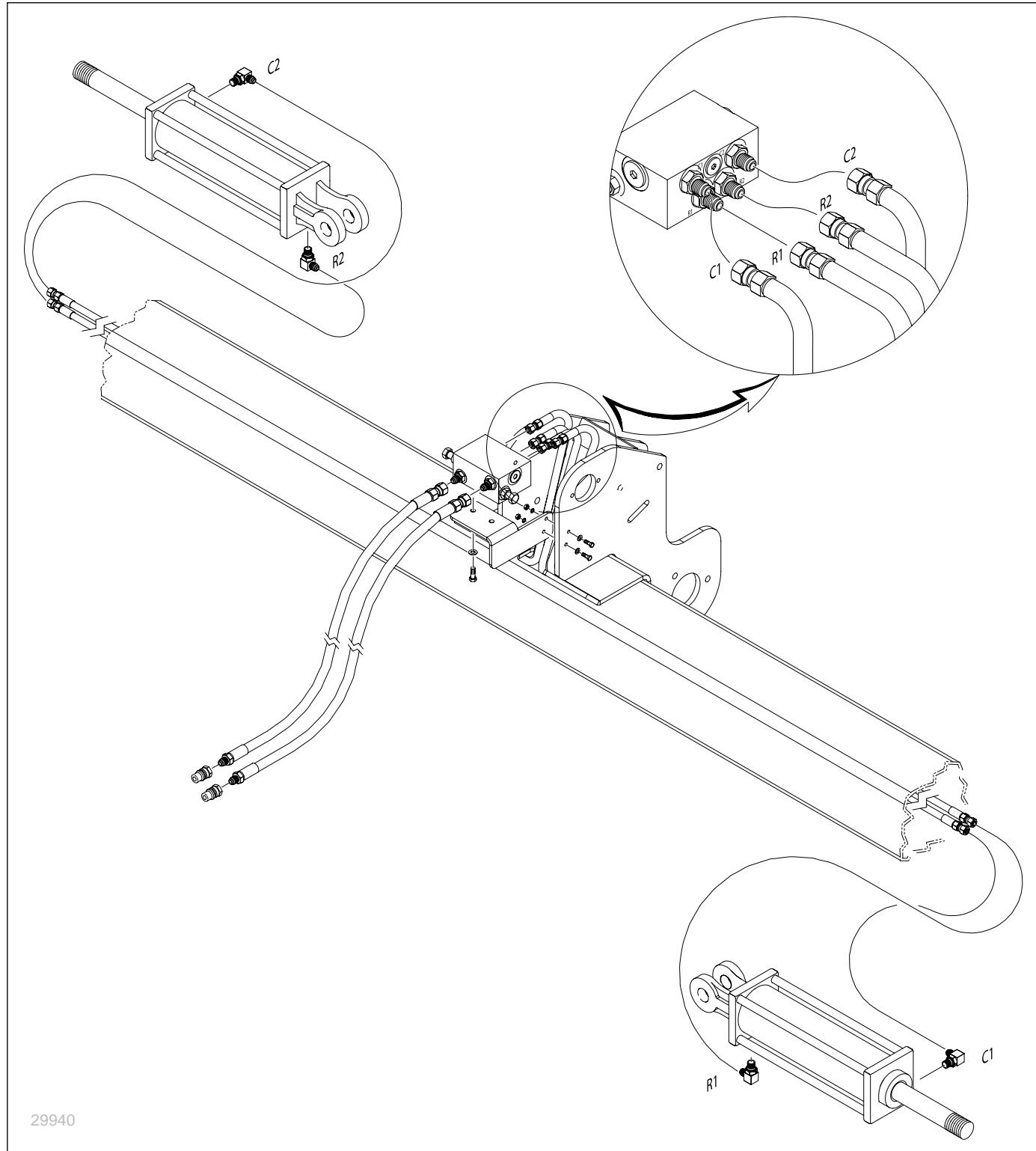
Hydraulic Diagrams

Fan Hydraulics (YP3P425A S/N B1004M-) (YP3P625A S/N B1006P-) (YP3P825A S/N B1007R-)



Fan Hydraulics (YP3P425A S/N B1005M+) (YP3P625A S/N B1007P+) (YP3P825A S/N B1008R+)

Marker Hydraulics (Option)



29940

Chain Routing

See also "Chain Maintenance" on page 83.

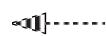
Legend:

34T

Sprocket or idler Tooth count

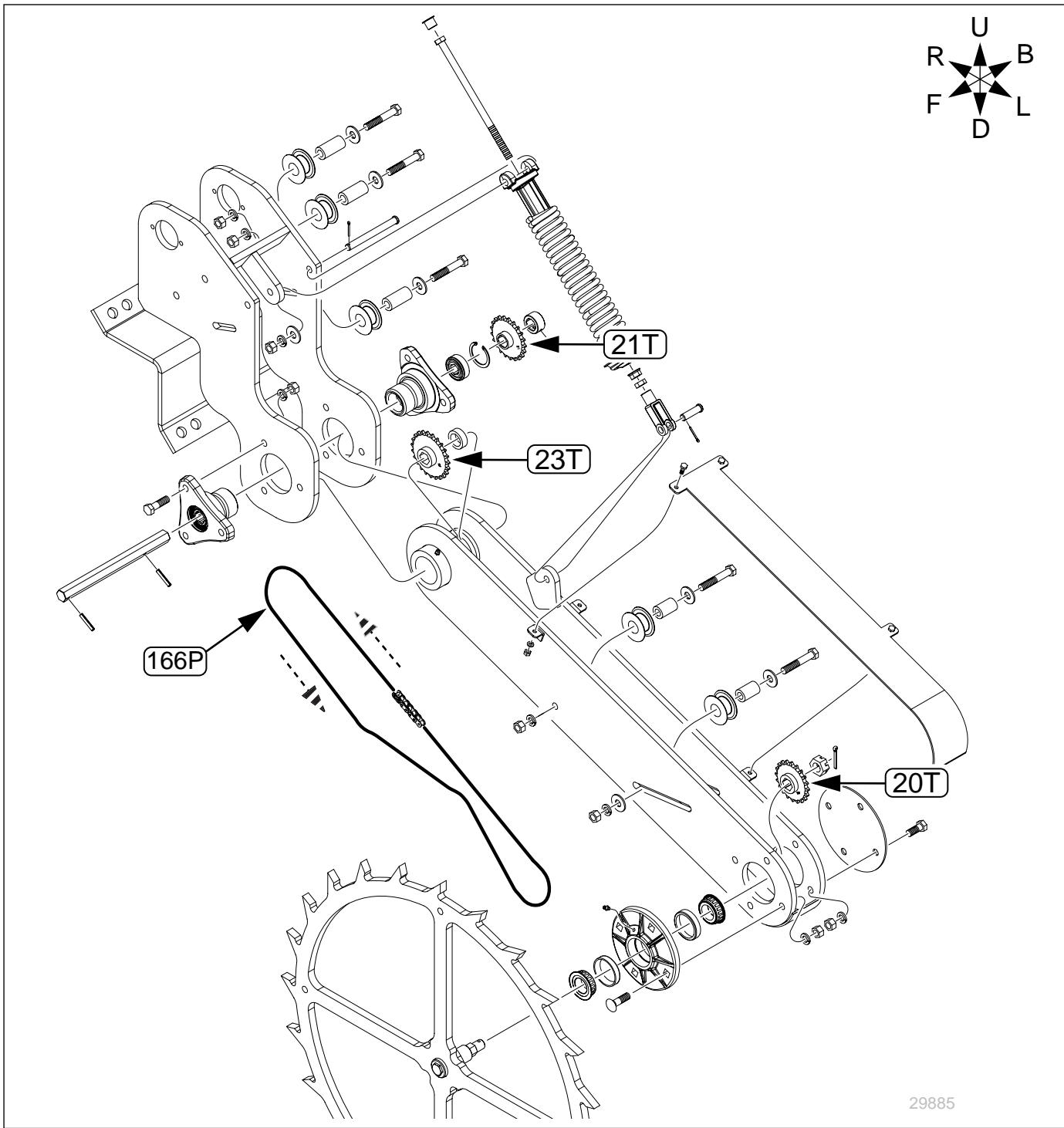
56P

Chain Pitch count

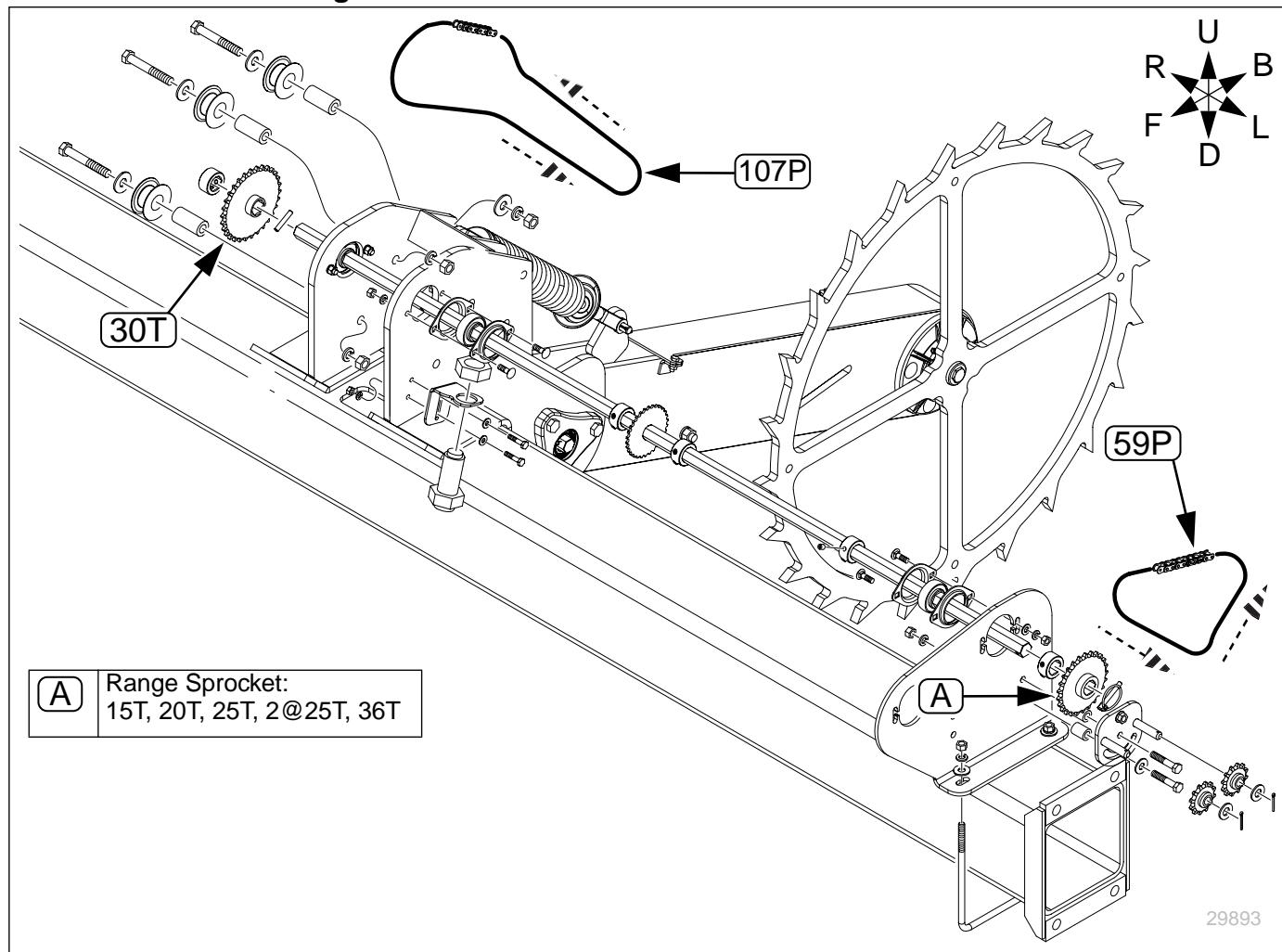


Direction of chain in motion

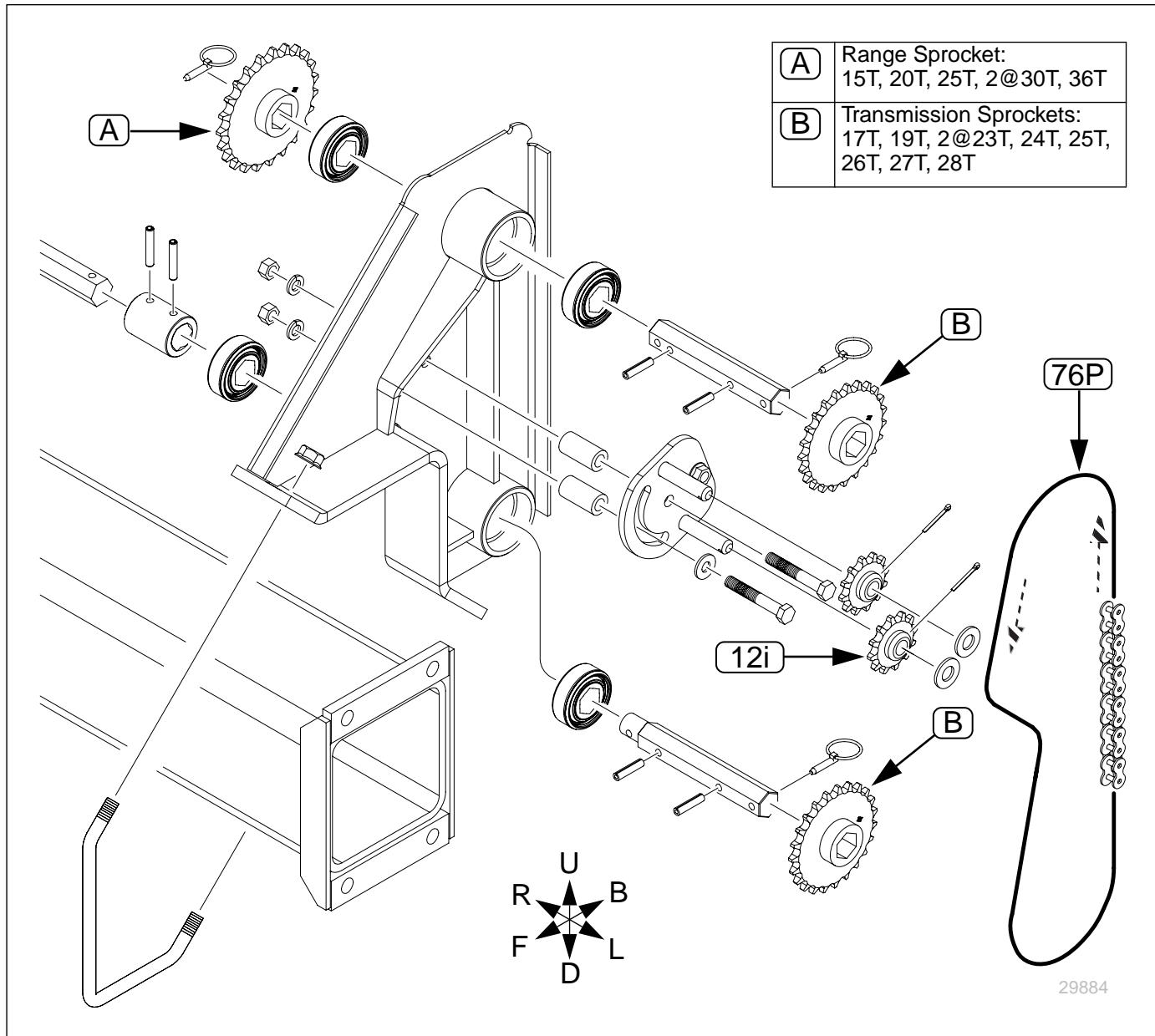
Ground Drive Arm Chain



Transfer Shaft and Range Chains



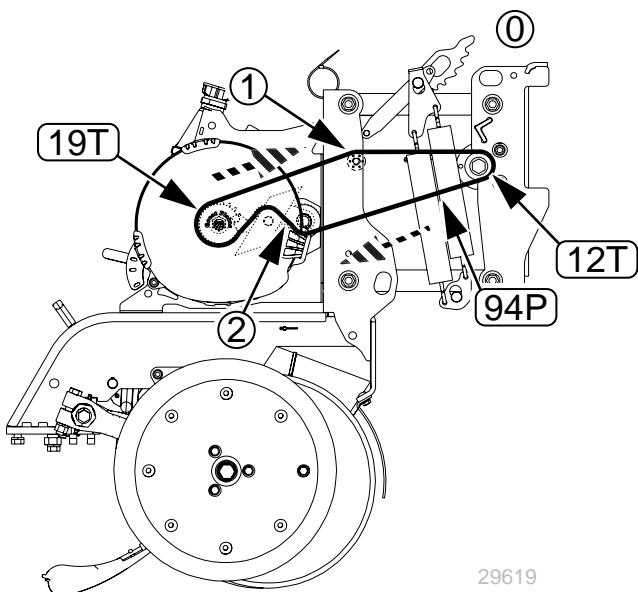
Transmission Chain



25AP Final Meter Drive

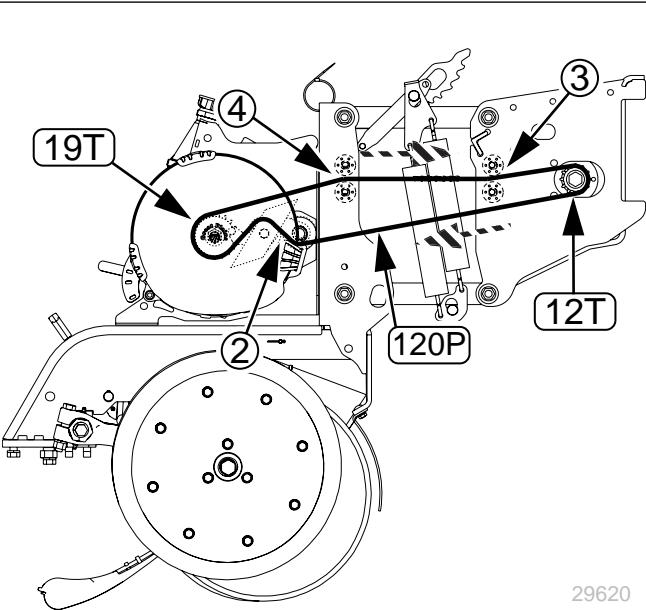
Legend:

- 34T** Sprocket or idler Tooth count
- 56P** Chain Pitch count
- ↔-----** Direction of chain in motion



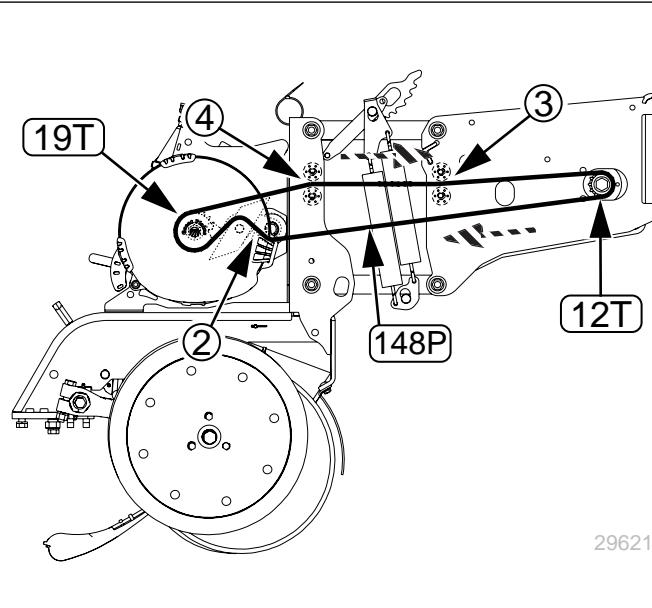
25P: Meter Drive (Front type)

- Note: ① No idlers on mount.
 ① top chain passes over single idler on shank
 ② be sure to reconnect idler spring



25P: Meter Drive (Mid type)

- Note: ② be sure to reconnect idler spring
 ③ top chain passes between 2 idlers at mount
 ④ top chain passes between 2 idlers at shank



25P: Meter Drive (Rear type)

- Note: ② be sure to reconnect idler spring
 ③ top chain passes between 2 idlers at mount
 ④ top chain passes between 2 idlers at shank



Appendix B - Pre-Delivery

This Appendix covers setup tasks performed by the dealer prior to delivery. These items need to be completed prior to any items in Appendix C (some of which may also be performed by the Great Plains dealer).

- Partially deploy ground drive (this page).
- Install press wheel assemblies (page 112).
- Engage ground drive spring (page 112).

The planter mainframe includes shipping stands which are returned to Great Plains after the tongue is attached.



Mount Ground Drive Wheel

The ground drive wheel is shipped loose. It must be bolted to the hub.

CAUTION

Sharp Object Hazard:

Use a hoist or two people. Wear gloves. The wheel is heavy and the tines are sharp.

Refer to Figure 97

- Select one:
 ④1 407-473D GROUND DRIVE WHEEL
 and three sets:
 ④2 802-331C RHSNB 1 1/2-13X1 3/4 GR5
 ④4 804-015C WASHER LOCK SPRING 1/2 PLT
 ④3 803-020C NUT HEX 1 1/2-13 PLT
- At the ground drive hub ④0, orient the wheel so that at the top, the vertical face of the top tooth is to the rear, and the longer angled face is to the front.
- Secure the wheel ④1 to the hub with bolts ④2, lock washers ④4 and nuts ④3.

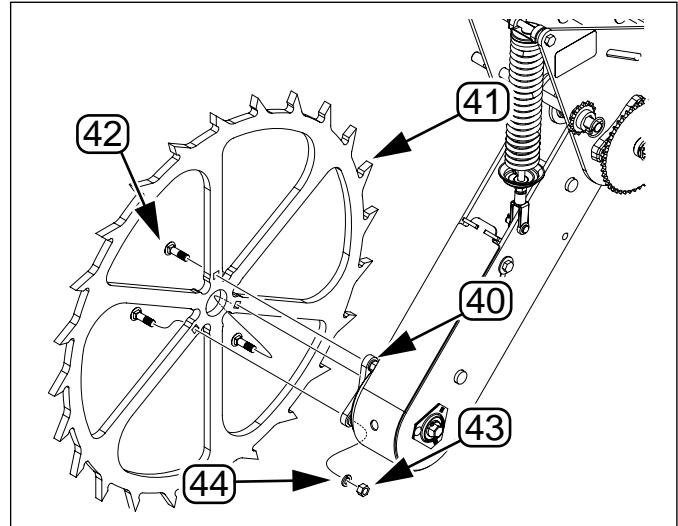


Figure 97
Install Ground Drive Wheel

31719

Install Press Wheel Assemblies

To meet highway clearance requirements, press wheel arms and wheels may not be factory-installed.

Refer to Figure 98

4. Remove and save the $\frac{1}{2}$ -13x1 inch hex head bolt and washer ② at the back of an incomplete row unit ③.

NOTICE

There are four bolts at this location. Remove only the hex head bolts. Do not loosen or remove the square head bolts forward.

5. Remove and save the $\frac{1}{2}$ -13x $1\frac{1}{2}$ inch hex head bolt ④, washer, and eccentric adjuster nut.
6. Align the $\frac{1}{2}$ inch holes in the press wheel assembly with the $\frac{1}{2}$ -13 tapped holes in the row unit, loosely assemble with the $\frac{1}{2}$ -13x1 inch hex head bolt and washer ②.
7. Loosely screw in the $\frac{1}{2}$ -13x $1\frac{1}{2}$ inch hex head bolt ④, washer, and eccentric adjuster nut. Rotate the adjuster to visually align the press wheel assembly with the row unit, and tighten the adjust and both bolts.

Engage Ground Drive Spring

Refer to Figure 99

8. Select one new:

⑤7 121-763S OPENER SPRING ROD ASSY. SHRT.

Check that the overall length ⑤, from clevis to trunnion, center-line to center-line, with pin holes aligned, is:

⑤ $17\frac{1}{4}$ inch $\pm\frac{1}{16}$ inch (43.7 to 44.0 cm)

9. Remove and save all pins at clevis and trunnion ends of spring rod assembly.
10. Secure the clevis end of the spring assembly to the arm lug ⑥, using one each:
⑤9 805-127C PIN CLEVIS 1/2 X 1 3/4 and
⑤8 805-064C PIN COTTER 7/64 X 1 LONG
11. Secure the trunnion end of the spring assembly to the upper trunnion ⑦, using one each:
⑤0 805-235C PIN CLEVIS 1/2 X 5 PLATED and
⑤8 805-064C PIN COTTER 7/64 X 1 LONG

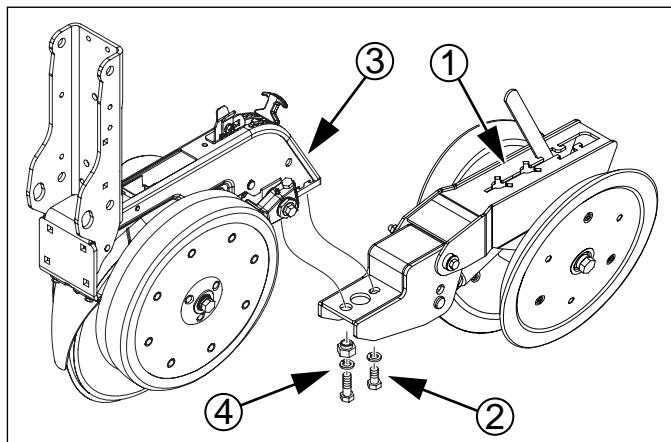


Figure 98
25AP Press Wheel Assembly

25383

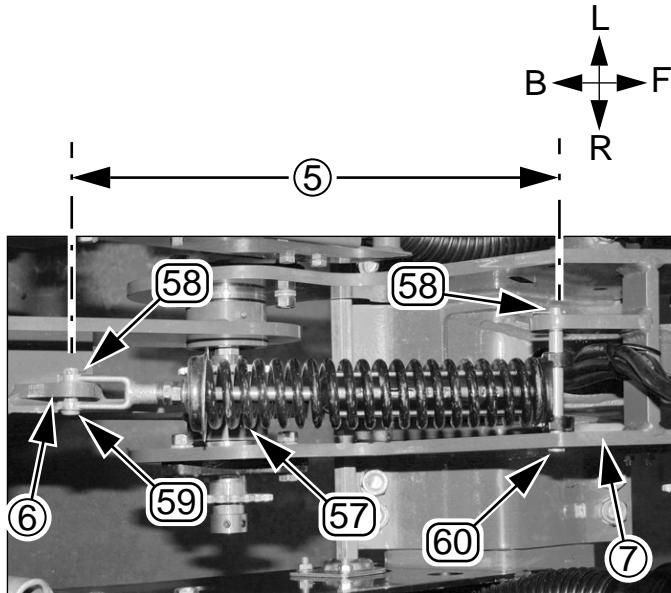


Figure 99
Ground Drive Spring Rod

31038



Appendix C - Initial Setup

This Appendix covers setup tasks performed only once, or at infrequent intervals. Routine setup tasks are covered in “**Preparation and Setup**” on page 12. Perform Appendix B tasks first. Some of these items may already have been done by your Great Plains dealer:

- a. Seed monitor console installation (below)
- b. Marker setup (Option, page 114)
- c. Scrapers (Option, page 117)

Post-Delivery Checklist

1. Read and understand “**Important Safety Information**” on page 1.
2. Check that all working parts are moving freely, bolts are tight, and cotter pins are spread.
3. Check that all grease fittings are in place and lubricated. See “**Lubrication**” on page 86.
4. Check that all safety decals and reflectors are correctly located and legible. Replace if damaged. See “**Safety Decals**” on page 6.
5. Inflate tires to pressure recommended and tighten wheel bolts as specified. See “**Torque Values Chart**” on page 103.

Seed Monitor Console Installation

Refer to Figure 100

The planter’s standard PM300 seed monitor system includes a console ① that needs to be mounted in the cab of the tractor to be used with the planter.

CAUTION

Transport and Field Safety Risk:

Mount the module so it is easy to monitor during planting, but does not interfere with safe operation of the tractor in the field or on public roads.

The monitor includes cables for power ②, speed sensor ③ and sensor harness ④. Installation instructions are found in the included Dickey-john® manual.

Power color code is:

+ positive: red

- negative: black

The included bracket ⑤ requires customer-supplied fasteners.

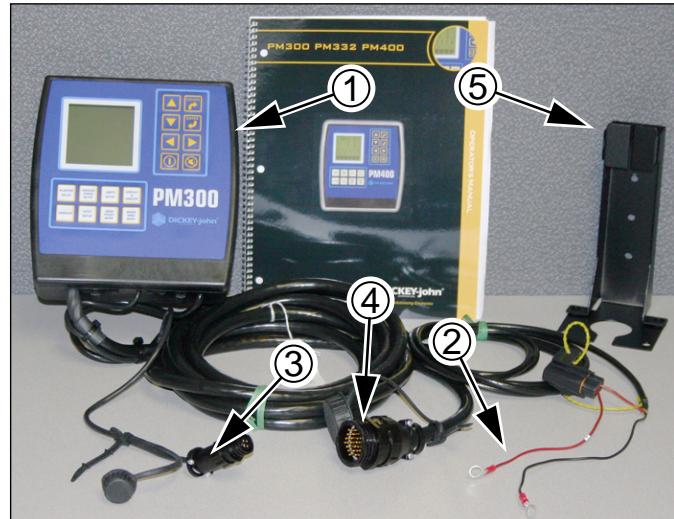


Figure 100
PM300 Tractor Components

28138

Initial Marker Setup (Option)

Marker Speed Adjustment

CAUTION

Overhead Sharp Object and Crushing Hazards:

Never allow anyone near the planter when folding or unfolding the markers. You may be injured if hit by a folding or unfolding marker. Markers may fall quickly and unexpectedly if the hydraulics fail. Marker discs may be sharp.

Refer to Figure 101 and Figure 102

Adjust folding speed for dual markers with hex adjustment screws on the sequence valve body. The valve sequence body is top center of main tool bar. Loosen jam nuts before making adjustments.

There is one adjustment screw for raising speed ① and one for lowering speed ②. You can identify adjustment screws by markings stamped in valve body.

Turn adjustment screws clockwise (S: slower) to decrease folding speed and counterclockwise (F: faster) to increase folding speed.

With tractor idling at a normal operating speed, adjust marker folding to a safe speed. Excessive folding speed could damage markers and void the warranty.

After adjusting the folding speed, tighten jam nuts on hex adjustment screws to hold settings.

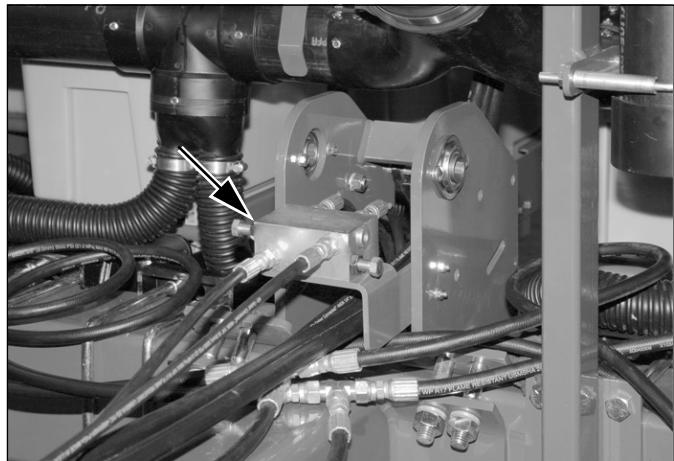
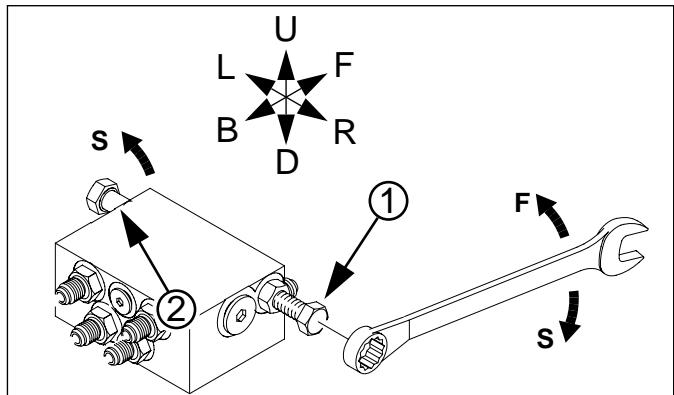


Figure 101

31007

Marker Sequence Valve Location

Figure 102
Marker Speed Adjustment

14048

Marker Extension

Marker extension needs to be adjusted once for the initial YP425A3P, YP625A3P & YP825A3P planter setup, and later only if changing row spacing (including row shut-off for single-row operation on a twin-capable planter).

1. Move the planter to a location where both markers may be safely unfolded. Lower the planter. Pull forward and lower the row units into the ground.

Note: Due to the relatively steep arm angles of short markers, extension measurements are likely to be incorrect if the main tool bar is not at normal operating height (26 inch).

2. Tilt up and unfold one marker.
3. Find the suggested initial marker Extension \textcircled{E} in the table on this page.

Note: When using altered twin-row spacings, marker extensions are different for each side.

Refer to Figure 103 and Figure 104

4. Measure out the Extension \textcircled{E} distance from each outside end row unit (whether in use or not). Do not measure to center of row pair.
5. Mark the ground at this point.
6. To adjust marker width, loosen nuts $\textcircled{1}$ on U-bolts $\textcircled{2}$. Move marker disk tube $\textcircled{3}$ in or out to get the proper adjustment. Tighten nuts $\textcircled{1}$.
7. Repeat steps 4 and 6 for the other side.
8. With the planter still lowered, drive forward a few feet for each side.
9. Check the mark locations. Adjust to obtain the table value.

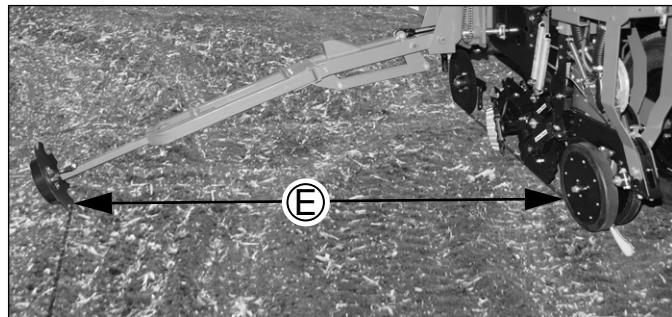


Figure 103
Marker Extension

31039

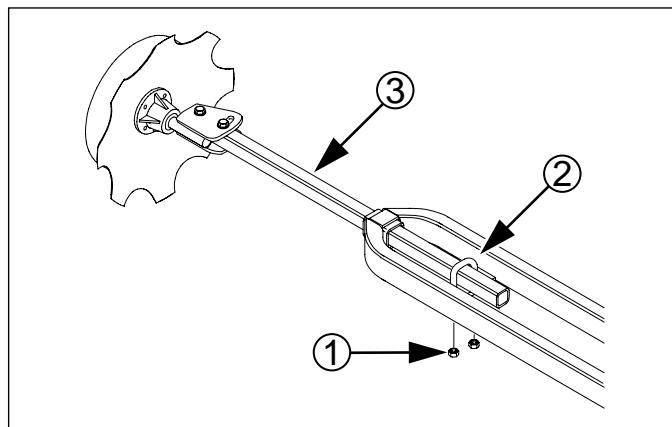


Figure 104
Marker Extension Adjustment

25450

Marker Extension Table

Planter Model	Spacing Used	Marker Extension	
		Left	Right
YP425A/3P -0470	Standard: 70cm Single	175.0 cm	
YP425A/3P -0430	Standard: 30in Single	75.0 in (190.5 cm)	
YP425A/3P -08TR	Standard: Twin 30in	70.8 in (179.9 cm)	
	as: 30in Single	62.4 in (158.6 cm)	79.2 in (201.1 cm)
YP425A/3P -0436	Standard: 36in Single	90.0 in (228.6 cm)	
YP425A/3P -0836	Standard: Twin 36in	85.8 in (218.0 cm)	
	as: 36in Single	77.4 in (196.7 cm)	94.2 in (239.2 cm)
YP425A/3P -0438	Standard: 38in Single	95.0 in (241.3 cm)	
YP425A/3P -0838	Standard: Twin 38in	90.8 in (230.7 cm)	
	as: 38in Single	82.4 in (209.4 cm)	99.2 in (251.9 cm)
YP425A/3P -0440	Standard: 40in Single	100.0 in (254.0 cm)	
YP425A/3P -0840	Standard: Twin 40in	95.8 in (243.4 cm)	
	as: 40in Single	87.4 in (222.1 cm)	104.2 in (264.6 cm)
YP625A/3P -0670	Standard: 70cm Single	245.0 cm	
YP625A/3P -0630	Standard: 30in Single	105.0 in (266.7 cm)	
YP625A/3P -12TR	Standard: Twin 30in	100.8 in (256.1 cm)	
	as: 30in Single	92.4 in (234.8 cm)	109.2 in (277.3 cm)
YP625A/3P -0636	Standard: 36in Single	126.0 in (320.0 cm)	
YP625A/3P -1236	Standard: Twin 36in	121.8 in (309.4 cm)	
	as: 36in Single	113.4 in (288.1 cm)	130.2 in (330.7 cm)

Planter Model	Spacing Used	Marker Extension	
		Left	Right
YP625A/3P -0638	Standard: 38in Single	133.0 in (337.8 cm)	
YP625A/3P -1238	Standard: Twin 38in	128.8 in (327.2 cm)	
	as: 38in Single	120.4 in (305.9 cm)	137.2 in (348.5 cm)
YP625A/3P -0640	Standard: 40in Single	140.0 in (355.6 cm)	
YP625A/3P -1240	Standard: Twin 40in	135.8 in (345.0 cm)	
	as: 40in Single	127.4 in (323.7 cm)	144.2 in (366.2 cm)
YP825A/3P -1240	Standard: 70cm Single	315.0 cm	
YP825A/3P -0830	Standard: 30in Single	135.0 in (342.9 cm)	
YP825A/3P -16TR	Standard: Twin 30in	130.8 in (332.3 cm)	
	as: 30in Single	122.4 in (311.0 cm)	139.2 in (353.5 cm)
YP825A/3P -0836	Standard: 36in Single	162.0 in (411.5 cm)	
YP825A/3P -1636	Standard: Twin 36in	157.8 in (400.8 cm)	
	as: 36in Single	149.4 in (379.6 cm)	166.2 in (422.1 cm)
YP825A/3P -0838	Standard: 38in Single	171.0 in (434.3 cm)	
YP825A/3P -1638	Standard: Twin 38in	166.8 in (423.7 cm)	
	as: 38in Single	158.4 in (402.4 cm)	175.2 in (445.0 cm)
YP825A/3P -0840	Standard: 40in Single	180.0 in (457.2 cm)	
YP825A/3P -1640	Standard: Twin 40in	175.8 in (446.6 cm)	
	as: 40in Single	167.4 in (425.3 cm)	184.2 in (467.8 cm)
as Single:	Right (front) rows in use; left (rear) rows locked up. No centerline compensation.		

122-278S Scraper Installation

Optional carbide disc scrapers are not factory installed. Start with row 1 (left-most row unit).

Note: If a Keeton seed firmer is also installed, see the Parts Manual for assembly details.

Note: This scraper is not compatible with Seed-Lok®.

Refer to Figure 105 and Figure 106

1. Remove one or both opener disc blades to gain safe access to the mount ①. Note the position of bushings and spacers for correct re-assembly (page 52).

2. Select one each:

⑧5 802-024C HHCS 3/8-16X3 GR5
 ⑧4 129BXT824 BRACKET FOR 890-929C FIRMER
 ⑧3 122-177D 10HD25 INSIDE SCRAPER MNT TUBE
 Insert the bolt ⑧5, from the rear, through the lowest hole of the bracket ⑧4. Place the tube ⑧3 over the bolt.

3. Select one scraper set:

⑨1 890-928C 25 SER AIR DESIGN IN SCRAPER
 Place the shoulder washer ② on bolt ⑧5 with the larger diameter to the rear (toward bolt head). Place the left scraper blade ③ on the washer, followed by the right scraper blade ④.

4. Select one each:

⑧9 804-011C WASHER FLAT 3/8 USS PLT
 ⑨0 804-013C WASHER LOCK SPRING 3/8 PLT
 ⑧7 803-014C NUT HEX 3/8-16 PLT

Place the flat washer ⑧9 on the bolt ⑧5, followed by the lock washer ⑨0 and nut ⑧7. Tighten bolt and nut to $\frac{3}{8}$ -16GR5 torque spec. Make sure blades pivot freely.

5. Select the scraper spring ⑤. Connect the spring between the blades, using the small top holes.

6. Select two sets:

⑧6 802-172C HHCS 5/16-18X2 1/2 GR5
 ⑧8 803-043C NUT HEX WHIZ 5/16-18 PLT
 Insert the scraper assembly ⑥ between the middle four lower square holes ⑦ of the opener frame. Secure with bolts ⑧6 and whiz nuts ⑧8.

7. Re-mount the removed disc blade.

Callout, Part & Description cross-references are drawn from a Reference Page.

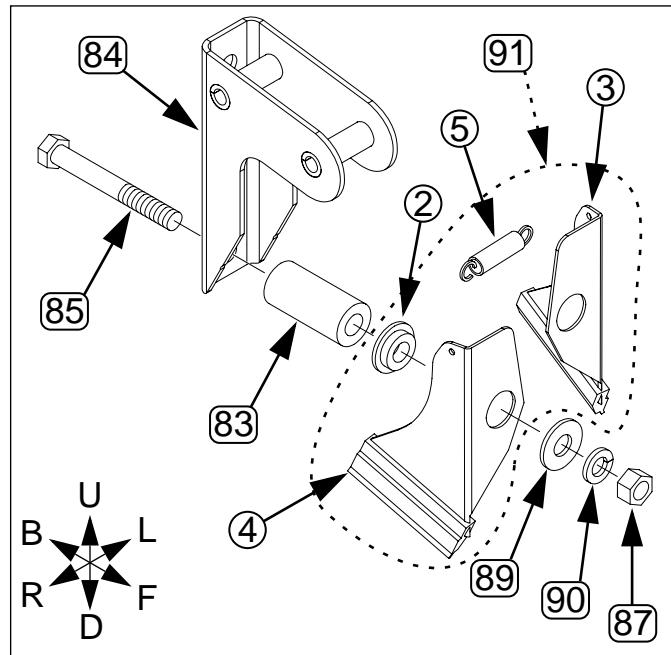


Figure 105
Scraper Pre-Assembly

29227

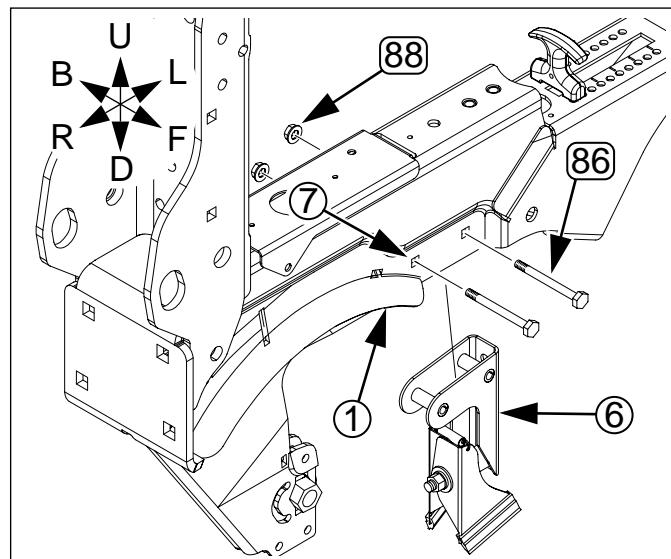


Figure 106
Scraper Installation

29228

2-Year Limited Warranty (Yield-Pro Planters)

Great Plains Mfg., Inc. warrants to the original purchaser that this seeding equipment will be free from defects in material and workmanship for a period of one year from the original purchase date when used as intended under normal service conditions for personal use. This Warranty is limited to the replacement of any defective part by Great Plains Manufacturing and the installation by the dealer of any such replacement part during the first year of operation. Second year warranty covers parts only, excluding general ground engaging parts and labor. Items covered under the second year warranty are as follows (parts only): hitch and main frame, gauge wheels, markers, air box/ manifold, Y- splitter tubes, fan and housing, row unit weldments, unit mounted attachments and frame mounted attachments. Great Plains Mfg., Inc. reserves the right to inspect any equipment or part which are claimed to have been defective in material or workmanship. This Warranty does not apply to any part or product which, in the judgment of Great Plains Mfg., Inc., shall have been misused or damaged by accident; or, lack of normal maintenance or care; or, which has been repaired or altered in a way which adversely affect its performance or reliability; or, which has been used for a purpose for which the product is not designed. This Warranty shall not apply if the product is towed at a speed in excess of 20 miles per hour. Soils containing rocks, stumps or other obstructions may void the warranty in its entirety.

Claims under this Warranty must be made to the dealer which originally sold the unit and all warranty adjustments must be made through such dealer. Great Plains Mfg., Inc. reserves the right to make changes in materials or design of the product at any time without notice. This Warranty shall not be interpreted to render Great Plains Mfg., Inc. liable for damages of any kind, direct, consequential, or contingent to property. Furthermore, Great Plains Mfg., Inc. shall not be liable for damages resulting from any cause beyond its control. This Warranty does not extend to loss of crop, losses caused by harvest delays or any expense or loss of labor, supplies, rental machinery, or for any other reason.

No other warranty of any kind whatsoever, express or implied, is made with respect to this sale; and all implied warranties of merchantability and fitness for a particular purpose which exceed the obligations set forth in this written warranty are hereby disclaimed and excluded from this sale.

This Warranty is not valid unless registered with Great Plains Mfg., Inc. within 10 days from the date of original date of purchase.

This Warranty does not cover damage caused by acts of God or accidents.

This Warranty does not cover units with excess use or units used in custom farming.

NOTE: Effective August 17, 2007; The Extended 2 Yr. Warranty covers only units utilizing these configurations: 1) Yield-Pro (YP) Frames, 2) 25 Series Row Units, and 3) Singulating Meters. All three criteria must be met to qualify for 2-Year Limited Warranty.

27120



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